the Skeptical Inquirer

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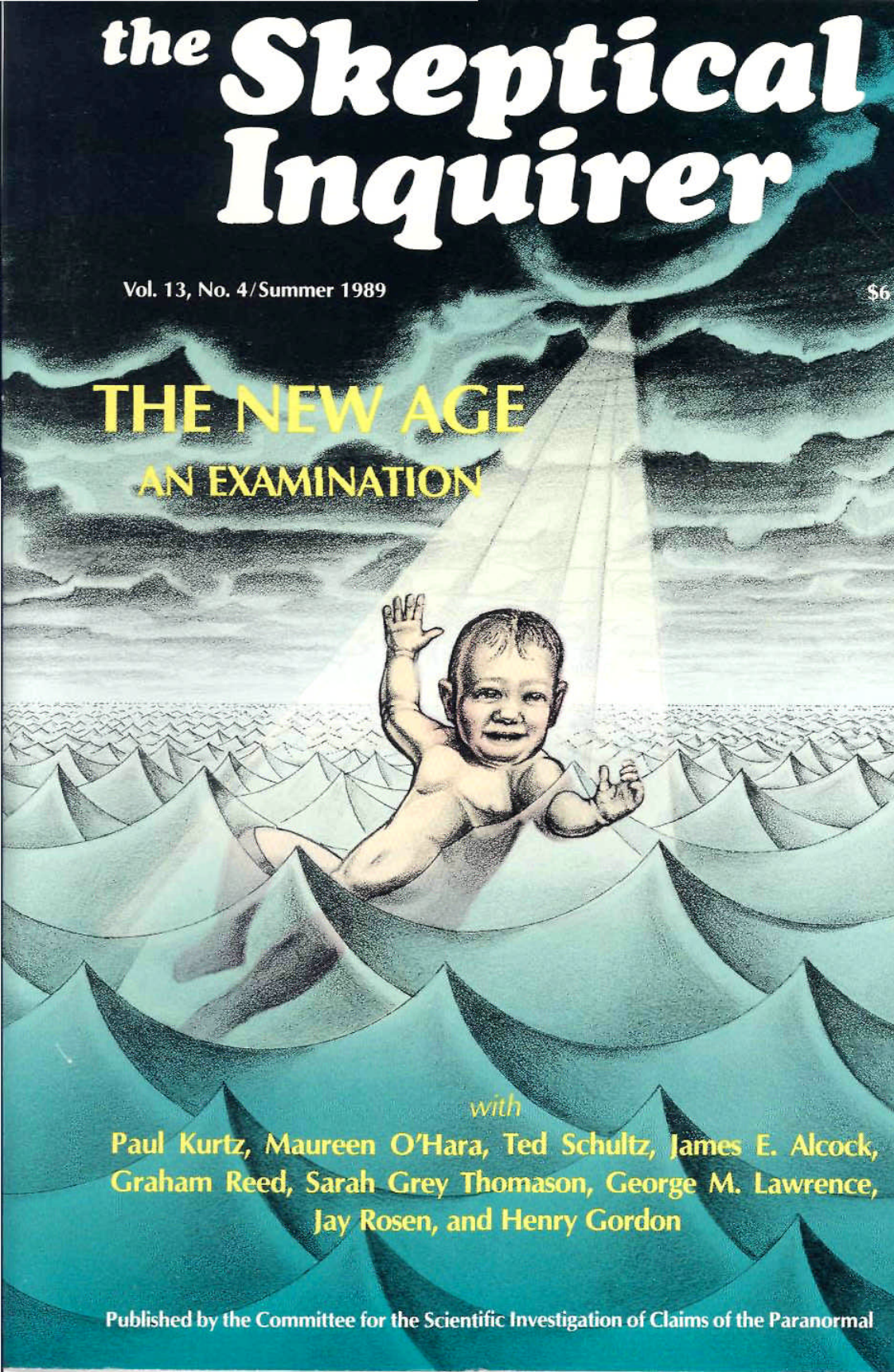
THE NEW AGE
AN EXAMINATION



with

Paul Kurtz, Maureen O'Hara, Ted Schultz, James E. Alcock, Graham Reed, Sarah Grey Thomason, George M. Lawrence, Jay Rosen, and Henry Gordon

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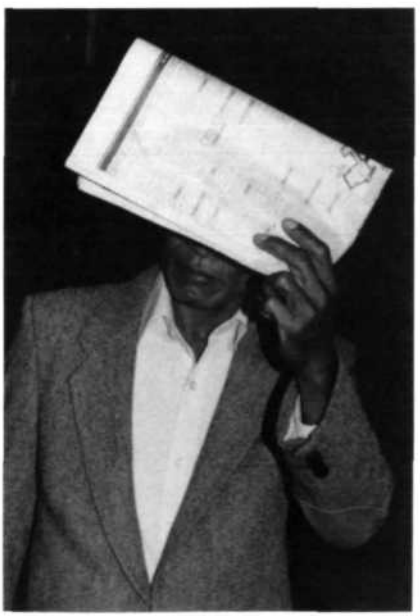
Special Report

California Court Jails Psychic Surgeon After State Investigation

Richard J. Brenneman

BROTHER JOE, the man reputed to vanish toxins from your blood by swishing his hand amid your innards "like a washing machine," was banished to a California jail, but a Marin County church that teaches channeling has labeled him a martyr to the American Medical Association.



José Bugarin (Brother Joe) dodges camera outside courtroom. (Photo by the author.)

The jail term meant at least a temporary hiatus in the career of a self-professed Philippine "psychic surgeon" who was hauling in up to $500 an hour—cash only, thanks—for what law enforcement called a "sleight-of-hand scam."

José Bugarin drew a nine-month sentence from a Sacramento County judge who rejected arguments by Bugarin's attorney that the diminutive Filipino had sacrificed himself to his religion. "He martyred himself with money, didn't he?" said Judge James L. Long during the September 27, 1988, sentencing.

Brother Joe is a member of the Philippine fraternity that claims to heal anything and everything through knifeless, scarless "surgical" incisions made with their bare hands. A confessed accomplice told undercover investigators Bugarin could cure anything but warts.

The "operations" were dramatic events in which the "surgeon" appeared to plunge his hand into patients' bodies to remove bloody masses from "incisions" that "healed" as soon as his hands were removed. Joe pulled "diseased tissues" from his patients' abdomens, knees, breasts, and throats. Clients were told they could see the messy goo, but couldn't touch it or take it. One victim said the stuff looked like coiled pasta.

But it was all a scam, said Sacramento County prosecutor David Druliner. It's all sleight of hand, practiced on "extremely defenseless" victims—often cancer patients. "He knows he's not helping these people," Druliner told the court at Bugarin's sentencing. "He's not taking anything out of them except their hopes."

Ray Simmons, Bugarin's defense attorney, said Bugarin had agreed to plead no contest to one charge of practicing medicine without a license because he wanted to avoid a trial. He didn't want to put his witnesses in jeopardy, Simmons said, "and, in effect, has martyred himself."

It was then Judge Long declared that Bugarin had, if anything, martyred himself for lucre. Bugarin's motive wasn't simply charitable, Long said, noting that Bugarin charged healthy fees for his services.

Bugarin, for his part, said most of the money went to his manager, San Jose, California, travel agent Vic Mapa (who was present but not arrested the day Bugarin was taken into custody). And Bugarin paid taxes on everything he did make, Simmons told the court. On the night of the arrest $1,174 in cash was found stashed in Bugarin's refrigerator.

From his home in San Jose, the "healer" traveled around the country with Mapa. According to Denver television reporter Ward Lucas, Bugarin took in about $17,000 during one week in Colorado last year. Co-defendant Helene Mellas said Bugarin had also treated patients in Canada and Mexico.

Druliner labeled Bugarin's practice a "psychic surgery scam." Cancer victims, terrified of radiation, chemotherapy, and radical surgery, find it a too-attractive claim. Thousands are lured to the Philippines each year in search of cures—and an increasing number of practitioners are coming to the United States. (One, the Reverend Alex Orbito, raked in $100 a *minute* for his services on a recent U.S. tour.[1])

Bugarin: A no-contest plea to practicing medicine without a license. (Photo by the author.)

According to testimony in the Bugarin case, Mellas told Bugarin's patients they shouldn't start chemo- or radiation therapy for cancer until *after* Brother Joe's miraculous ministrations. The energy wouldn't be good, she said.

Mellas, 63 at the time of her arrest, is a Sacramento-area woman who unsuccessfully claimed exemption from prosecution on the grounds she is a mail-order ordained "minister" in the Universal Life Church. Mellas told witnesses she was an apprentice psychic-surgeon who had not yet mastered the art of "magnetizing" her hands to enter a patient's body. Both prosecution and defense attorneys acknowledged that she was a sincere believer and allowed her to avoid jail time and formal probation in return for a promise to cooperate in the Bugarin prosecution. According to her statements to investigators, she had organized healing sessions with Bugarin at several locations in Northern California.

Psychic surgery was long ago debunked as a sleight-of-hand scam by James Randi,[2] William Nolen,[3] Robert Steiner, and others, but it still draws a large number of desperate marks.

Déjà Vu Tours, a travel agency owned by the Right Reverend Susan Hull Bostwick of San Rafael, sponsors "Philippines Psychic Surgeons" tours. (November 8-21, 1988, and February 11-25, 1989, were two recent offerings.) "Experience Far East Wonders!" gushes an ad in the *Psychic Reader,* the church-affiliated newspaper. "What energy do you have in your body? How does it affect your physical health?" In other issues, Bostwick describes how members of an earlier tour were treated by two surgeons, the Reverend José Segundo and his associate, Brother Cortez.

Bostwick is also an officer of the Church of Divine Man, which in turn operates the Berkeley Psychic Institute, and is affiliated with Déjà Vu Publishing Co., which publishes the *Psychic Reader* (which bills itself as "The Only Newspaper by Psychics for Psychics"), of which she was editor until October 1988, and currently serves as managing editor. Her husband is Lewis S. Bostwick, who founded the church 15 years ago. The church teaches channeling and other New Age skills in eight branches in Northern California and one in San Diego.

In its October 1988 issue, *Psychic Reader* carried two articles that portray Bugarin as the victim of "the medical inquisition" and Mellas as a victim of stress and intimidation.[4, 5] In January 1988, the paper had reported that an unnamed minister, during a church New Year's Eve mass-channeling, had predicted a psychic surgeon would be prosecuted. The "prediction" was made eight months *after* the arrests and was reported in an issue carrying an ad for another Philippine psychic surgeon practicing in the Bay Area who had once worked out of Mellas's home.[6]

Bugarin was arrested by investigators for the State Board of Medical Quality Assurance (BMQA) on April 3, 1987, after a tip from the husband of a disgruntled client sparked an investigation. The client in question was herself a "psychic" who had contracted breast tumors that a physician found to be still present after their "removal" by Brother Joe.

Her husband, then a deputy county attorney, complained to BMQA and launched the investigation. (Coincidentally, he was the attorney who drafted the county's ordinance governing psychic businesses.) With a reference from the lawyer, another investigator, posing as the sister of a cancer victim, scheduled an appointment with Mellas.

Mellas, according to the agent, told her she had to be very careful of who was allowed to come—the AMA was a real threat. She hosted the healing sessions at her home. Patients paid $5 for an "orientation" featuring a talk by Mellas and a videotape presentation of other psychic surgeons. Mellas told of one surgeon so deft that he removed a female client's breast implant—which the irate woman demanded he replace. (Whether or not he succeeded doesn't appear in the record.)

Those who wanted healings were scheduled for sessions—six in the case of an undercover investigator—with the first at $45 and the other five at $40 each. All payments were in cash, Mellas said; Brother Joe had no way of handling checks. Mellas said she received none of that money, which, she said, was split between Bugarin and Mapa (a point on which Bugarin's attorney concurred).

Patient names and ailments were written on slips of paper, and the patients were directed to other rooms (males and females segregated), where they stripped down to their underwear and donned robes. They were given numbers and allowed to sit on chairs lined up along

the hallway to await their summons into the bedroom where Bugarin and Mellas waited, with a "helper" posted in the bath.

The undercover officer went through only the first two sessions, then announced the arrest. No psychic surgery had yet been performed—only a laying on of hands by Bugarin and Mellas to "energize" the body. The officer later said he believed Bugarin was suspicious of him and his two colleagues.

At the moment of the arrests, a raiding party of officers stationed outside rushed in. Cotton balls soaked in nonhuman blood and containing small bits of nonhuman tissue—believed to be psychically removed "tumors"—were found in the toilet. At one hearing in the case, Bugarin's attorney claimed the tissue found had been planted by a prosecution witness. But at the time of the arrest, Bugarin was carrying a small plastic bottle filled with cotton balls, according to officers.

The most damning statement came from Mellas, who agreed to testify for the prosecution in exchange for agreement that she would spend no time in jail for her role in Bugarin's operations (she assisted, handing Bugarin oil and cotton during the sessions).

Mellas said that Bugarin admitted using the fake tissue—which he described as "just cotton balls and red stuff"—only because "when you work on so many people in a day, he would get so tired that he couldn't open a channel strong enough." Bugarin declined to speak with this writer.

Psychic Reader editor Susan Hull Bostwick, in a December editorial, acknowledged that the tissue wasn't human. Her explanation: "Spirit, it seems, was playing a great joke." Mellas told investigators she believed that Bugarin was genuine and that in previous operations he had performed honestly. As for the noncancerous or nonhuman origin of tissue, she explained that the gore was only a "materialization" and was primarily used to comfort the patient that something was going on. The real healing, she said, took place on the spiritual—not material—level.

In an interview in the same issue, defense attorney Simmons claimed that only one complaint had ever been raised against Bugarin, the one resulting in his arrest.

However, state investigators were able to find several "patients" who weren't healed, including a woman whose cancer had metastasized after Bugarin "removed it." She said she had discontinued medical treatment on Mellas's advice. The woman's condition worsened after Bugarin's treatment, and she finally returned to her physician. After a biopsy (which found the cancer had spread), she suffered a heart attack. Had she died, prosecutor Druliner was ready to file murder charges against Bugarin under California law, which holds that death resulting from any criminal act can be charged as murder. The woman later recovered and underwent cancer surgery.

Another woman, with no medical problems, went to Bugarin out of curiosity. She told investigators the "surgeon" pulled "tumors" from her stomach and throat and that Bugarin told her "he had also pulled her fat plugs while he was in her, which would help her lose weight."[7]

Bugarin and Mellas were originally charged with two crimes: practicing medicine without a license and cancer quackery—a specific crime in California. As a result of plea bargains, both were allowed to enter *nolo contendere* (no contest) pleas to practicing medicine without a license. Mellas was promised no jail time and Bugarin no more than a year in county jail.

During a pretrial hearing, Bugarin took the stand. He portrayed himself as a healer who was part of a venerable Philippine tradition. He was, he said, a

member of the Union Espiritista de Filipinas, a church he claimed is 200 years old. He said he couldn't testify about what happened during the healings because he didn't know. He was praying, unconscious, he said.

Mellas said Bugarin comes from a family of "five or six surgeons" and started to learn the art at the age of five. Mellas said several other members of Bugarin's family were "healers." A "healer" differs from a "surgeon" in that the healer hasn't mastered the art of rendering his or her hands "electromagnetic" so that they can enter the body and "attract" diseased tissues, she explained. Mellas described herself as a "healer," although once in the Philippines and with the assistance of a "surgeon" her hands had entered a patient's body.

After the arrests, the Sacramento Skeptics Society (now the Society for Rational Inquiry) contacted prosecutor Druliner and placed him in contact with Steiner and Randi, two magicians and Fellows of the Committee for the Scientific Investigation of Claims of the Paranormal who have made detailed studies of the Philippine practice. Randi is a MacArthur Fellow and noted author and Steiner is president of the Society of American Magicians. Both have given many demonstrations of psychic surgery to medical and other groups.

Bugarin's no-contest plea has the same legal force and effect as a guilty plea, Judge Long told him. The only difference is that it may not be used as evidence in any subsequent civil suits. On October 3, 1988, Bugarin surrendered himself to begin his nine-month sentence in Sacramento Jail.

Psychic Reader is currently pleading for donors to send money to defense lawyer Simmons. Bugarin has run up a $40,000 debt, the paper says. Simmons told the newspaper, "There has been no indication to me that he's going to stop participating in faith healings."

Notes

1. James Randi, private communication to author.

2. James Randi, *Flim-Flam* (Buffalo: Prometheus Books, 1982).

3. William A. Nolen, M.D., *Healing: A Doctor in Search of a Miracle* (New York: Random House, 1974).

4. "Berkeley Psychic Institute Supplement," *Psychic Reader,* San Rafael, California, October 1988, p. 8.

5. "The Christ Force: Channeling for Surgery," *Psychic Reader,* October 1988, p. 8.

6. This surgeon, the Reverend Joseph Martinez, practices "a unique variation" of the Philippine art that seems to comply with current California law. Martinez does not touch his "patients"; rather, the healing is "performed by spirit psychic surgeons" who work invisibly, according to his ongoing ad in *Psychic Reader* (e.g., August 1988, p. 6). Martinez and Mellas were briefly investigated by the California Board of Medical Quality Assurance in 1984, but no action was taken.

7. Board of Medical Quality Assurance Investigative Report, p. 19. •

Richard J. Brenneman is a journalist and editor in Sacramento, California.

News and Comment

Scientific Literacy: New Survey Finds Levels Still Low in U.S., U.K.

AMONG U.S adults, only about 1 in 18 knows enough about the vocabulary and methodology of science to function effectively as a citizen and consumer when faced with decisions about scientific topics like nuclear power, acid rain, and health, according to a 1988 survey funded by the National Science Foundation (NSF) and conducted by Jon Miller, director of the Northern Illinois University Public Opinion Laboratory.

The results of the NSF study suggest that only about 6 percent of Americans 18 years and older combine a general understanding of how science impacts society and the daily lives of individuals. The survey had more than 2,000 respondents and a margin of error of ± 3 percent.

Miller has conducted similar surveys with NSF support over the past decade and finds no significant differences between the results of his earlier surveys and those of the 1988 study. And for the first time, identical questions were used to measure the understanding of science in the United Kingdom, where respondents fared as badly as those in the United States.

"The important point," Miller said, "is that in two of the world's oldest and most prominent democracies, at least nine out of ten citizens lack the scientific literacy to understand and participate in the formulation of public policy on a very important segment of their national political agendas."

Miller used three sets of questions: one to measure knowledge of the process of science, one to measure understanding of scientific terms and concepts, and a third to evaluate understanding of how science affects society. Only respondents achieving minimally acceptable scores on all three sets were judged to be scientifically literate.

According to Miller, about 50 percent of the respondents had an adequate understanding of the impact of science and technology, while 12 percent understood scientific processes or thinking, and 28 percent understood scientific terms and concepts. Age was not a significant factor, but men scored somewhat better than women, and completion of college-level science courses correlated with higher scores. "It is clear that it is the science course experience rather than the general degree experience that makes a difference," Miller said. "By inference, this result suggests that the high school science experience has little impact on subsequent adult literacy."

Survey results from the United States and the United Kingdom were very similar, although a slightly higher percentage of British respondents understood the impact of science on society. However, almost one-half of U.S. respondents gave an acceptable definition of computer software, whereas only about one quarter of British respondents succeeded in defining the term.

To gauge understanding of the process of science, respondents were asked to reply in their own words to the question, "What does it mean to study

something scientifically?" Answers judged correct included the testing of hypotheses and the building of theories, the use of experiments, and systematic comparative study. References to simple instruments, measurements, or classification were judged incorrect. As a check, respondents who answered this open-ended question correctly were asked questions about astrology. Only those who indicated that astrology is not at all scientific were classified as having an adequate understanding of the process of science.

To be considered adequately knowledgeable about scientific terms and concepts, respondents had to answer correctly at least 7 of 10 questions, most of them true-false. Respondents were asked to reply "true," "false," or "don't know" to the following statements. (The correct answer and the percentage of correct U.S. responses are in parentheses.)

> The oxygen we breathe comes from plants. (True, 81% correct)
>
> Lasers work by focusing sound waves. (False, 36% correct)
>
> Electrons are smaller than atoms. (True, 43% correct)
>
> The universe began with a huge explosion. (True, 54% correct)
>
> The continents on which we live have been moving their location for millions of years and will continue to move in the future. (True, 80% correct)
>
> Human beings, as we know them today, evolved from earlier species of animals. (True, 46% correct)
>
> The earliest human beings lived at the same time as the dinosaurs. (False, 37% correct)

Respondents were asked, "Which travels faster: light or sound?" (light, 76% correct), and "Does the earth go around the sun, or does the sun go around the earth?" Questioners asked those who knew that the earth orbits the sun whether this event takes one day, one month, or one year. (Earth orbits the sun in one year, 45% correct.) The final question used to evaluate understanding of scientific concepts asked respondents to define DNA in their words; 22 percent did so correctly.

To determine whether respondents understood the impact of science on society, questioners asked whether the following statements were true or false:

> Radioactive milk can be made safe by boiling it. (False, 64% correct)
>
> Antibiotics kill viruses as well as bacteria. (False, 25.5% correct)
>
> Is all radioactivity man-made or does some radioactivity occur naturally? (Some occurs naturally, 65% correct)

A four-part survey question on probability asked what it means when doctors tell a couple that they have "one in four chances of having a child with an inherited illness."

> Does this mean that if they have only three children, none will have the illness? (No, 87% correct)
>
> Does this mean that if their first child has the illness, the next three will not? (No, 86% correct)
>
> Does this mean that each of the couple's children will have the same risk of suffering from the illness? (Yes, 72 percent correct)
>
> Does this mean that if their first three children are healthy, the fourth will have the illness? (No, 84% correct)
>
> (Must answer all four parts correctly. [57% did so.])

Forty-nine percent of U.S. respon-

dents could define computer software as the instructions that computers use to perform various tasks, or could name examples of software. In a final question, when given a list of choices, 25 percent correctly chose "eating a lot of animal fat" as the most serious cause of heart disease in the United States.

Respondents who correctly answered three of these six questions were considered to have an adequate understanding of the impact of science on society.

—National Science Foundation

ICR Denied Approval to Grant Science Degrees

THE INSTITUTE for Creation Research (ICR)—one of the main promoters of creationist pseudoscience in the guise of science—has been denied approval by the State of California to grant science degrees.

ICR is the institutional home of well-known creationists Henry Morris (its founder and president) and Duane Gish.

The battle isn't over, however. Considerable bureaucratic procedures and appeals are still ahead. Nevertheless, the outlook appears good that the ICR's current right to grant master's degrees in science education, astro-geophysics, biology, and geology will be repealed. With these degrees, recipients become eligible for certification as secondary-school science teachers.

The dispute isn't over accreditation; ICR is a private nonaccredited school, and it has apparently never attempted to get official accreditation other than by a Christian school accrediting agency. The issue is state approval to grant a degree. Without this approval, a school cannot grant degrees, nor can its students apply for student aid, loans, or other financial benefits.

The state charter requires that degree-granting institutions be reviewed every three years, and it looks as though ICR isn't going to be successful this time.

Since the ICR is allegedly a science program, it has to be measured according to what scientists consider science. And its curriculum must be "consistent in quality with accredited institutions." But ICR has only five faculty members for four graduate programs. Supporters of science education began an active campaign last year to ensure that this time the State of California followed its own guidelines in evaluating ICR.

A Visiting Committee of five California scientists and educators prepared a brief report that found deficiencies in the ICR program but nevertheless initially recommended approval, by a 3-2 vote. "The text of the report was, in a word,

The New Age: A Special Issue

All the articles and book reviews and a part of the News and Comment section in this issue of the SKEPTICAL INQUIRER are devoted to the New Age movement. We've tried to examine the most pertinent facets of New Age concerns and to do so from a variety of points of view. Few readers are likely to agree with everything in these articles, nor should that be expected or even desired. They represent a healthy diversity of opinion and analysis from thoughtful and well-informed vantage points. We hope you will find it a fresh and useful look.

Many of the articles are somewhat condensed versions of invited talks given at the recent CSICOP conference "The New Age: A Scientific Evaluation"; the authors were encouraged to revise or update their comments as they wished. The book reviews were prepared expressly for this issue.—ED.

baloney," says scientific consultant William Bennetta in the first of an informative two-part investigative article in *BASIS*, the newsletter of the Bay Area Skeptics (February and March 1989 issues). "It continually omitted or obfuscated any information that might have told the real nature or aims of the ICR, the ICR's graduate school or the men on the school's faculty, and it repeatedly promoted the pretense that the ICR was doing scientific work."

But the two dissenters on the committee gave State Superintendent Bill Honig documentation about the ICR and also about the committee's proceedings. Honig, who in recent years has been a strong defender of science education against the creationists' tactics, called the committee members to a meeting. At the end of their discussion, the vote was 3 to 2 *against* approval.

"No one is stopping the ICR from granting degrees in religion or creation," said Honig, "but they are holding their people out to have science degrees, which they don't. The vast bulk of what they learn is not science. . . . It's a consumer issue. If a person is going to get a degree in anything, the institution should be approved for quality in that area."

The ICR mounted a call-in protest campaign and was expected to follow the appeal process, but Honig is not obligated to accept the hearing officer's findings. "So far," says the pro-science Bay Area Committee of Correspondence for Science in a report on the procedures, "Honig has acted with exemplary responsibility and integrity."

—*K.F.*

California Science Framework Supports Teaching Evolution

"SCIENTIFIC creationist" demands for equal time in the science classroom have been defeated by repeated court decisions, but schools avoid teaching evolution or denigrate it as "only theory," according to scientists at the 1989 meeting of the American Association for the Advancement of Science (AAAS) in San Francisco in January.

But U.S. science textbooks and teaching may improve if California succeeds in raising its local standards. At a symposium sponsored by the National Center for Science Education (NCSE), University of California paleontologist Kevin Padian reported on the new Anti-Dogmatism Statement approved by the California State Board of Education. The new policy requires clear separation of science and nonscience in both method and evidence. It is part of the California Science Framework, the document that determines what teachers must teach and what textbook publishers must include in books sold in the state.

"The new Anti-Dogmatism Statement is designed to protect both teachers and students from pressure groups which present nonscience as so-called 'alternative' theories to scientific understanding," Padian said. "It discourages bogus criticisms of science such as those mounted by 'creation scientists.' " The Board voted unanimously to strengthen and clarify the nonbinding guidelines. The changes were backed by science teacher organizations in the state.

The revised policy says: "Neither the California nor the U.S. Constitution requires, in order to accommodate the religious views of those who object to certain material or activities that are presented in science classes, that time be given in the curriculum to those particular religious views. . . . As a matter of principle, science teachers are professionally bound to limit their teaching to science and should resist pressure to do

otherwise. Administrators should support teachers in this regard. . . ." The statement notes that students need to understand the nature of modern science, including the fact that science changes through time. They are free to disagree with the conclusions of science, but they must understand its data and methods. Many religious leaders approved the new policy because it separates religion and science and does not denigrate religion, although some fundamentalist leaders have vociferously objected.

The revised Science Framework will require a clear separation of religiously based explanations of the origin of the universe and life from scientific explanations. "Publishers cannot afford to ignore the largest market in the country," noted John R. Cole, NCSE president, "and they can't afford to produce separate editions for different states. When California raises its standards, the entire country benefits."

The revised Framework is expected to require textbooks to improve the treatment of evolution, ecology, and reproduction—subjects often avoided by publishers for fear of controversy. In 1985, the state rejected all proposed junior high school science books because of their lack of coverage of these topics. This sent a message to publishers that California would no longer tolerate inaccurate and outdated science books. •

Cold Fusion Confusion

WHATEVER the final outcome of the scientific drama played out this spring over reports from Utah of net-energy-producing cold nuclear fusion, the public was treated to a fascinating case study in the messy process of scientific discovery. The case, it seemed, could turn out to be an epochal scientific achievement of overarching importance, or it could turn out to be an artifact, a mistake, or a delusion. Or perhaps it could be something in-between, some previously unknown reaction that is new and important but less significant scientifically and practically than originally claimed. By early May, with several major research institutions reporting negative results in their own experiments and serious flaws in the Utah ones, the balance seemed to tip strongly against the Utah results.

The case shows the genuine excitement a truly astonishing claim can cause among scientists, and the equally important proper skepticism science must apply to any new and unusual claim. Underscoring both imperatives, scores of labs immediately began trying to replicate the experiment. A few claimed to be successful, at least partially. Others were not. The reasons for these disparate results will undoubtedly prove fascinating in themselves. The case presents so many events, issues, and conflicts it will be fodder for sociologists, philosophers, and other observers of science for years to come. Not the least of the issues was the propriety of scientists announcing a major discovery at a news conference before a scientific paper had been submitted, and the authors' subsequent withdrawal of their *Nature* paper, unable to take the time to meet peer-reviewers' requested revisions. All in all, it has been a fascinating, exciting, and illuminating experience for scientists and the public alike.

—KENDRICK FRAZIER, Editor

May 2, 1989

Cryptozoology: It's Not Just 'Monster' Hunting

This report completes our coverage of the CSICOP Chicago conference.—ED.

DO DINOSAURS still walk the earth? Are Yeti and Sasquatch living, breathing creatures or are they figments of the imagination? Who or what is Nessie? These are the types of romantic, speculative questions that many people associate with cryptozoology. It came as somewhat of a surprise, therefore, to hear the first speaker in the CSICOP conference session devoted to cryptozoology list seven categories of cryptozoological claims, most of them far less dramatic. Session moderator Lee Nisbet, associate professor of philosophy at Medaille College and a CSICOP Executive Council member, pointed out that the term *cryptozoology* was created to define a field that describes animals *before* specimens have been collected. The panel represented a spectrum of belief in the field, its claims, and its endeavors.

Opening speaker J. Richard Greenwell has served as secretary of the International Society of Cryptozoology in Tucson since its founding. In his heavily illustrated talk, he outlined these seven categories of cryptozoological interests:

1. *Giant individuals of known species,* such as giant sturgeon, which may be responsible for some lake-monster claims in the United States, giant white sharks and crocodiles in New Guinea and Australia, and giant anacondas in South America.

2. *Known animals recorded to be in geographical areas where they're not supposed to occur,* such as—to take a historical example—the white rhino, which had been known to be only in South Africa until 1901, when it was found in Sudan, about 2,000 miles from its known habitat.

3. *Species that have been described, but for which only limited evidence exists,* such as the pygmy hippo, which had been reported in the nineteenth century, but was not found until 1913.

4. *Animals that reportedly became extinct in historical times,* such as some bird species of Peru and New Zealand, of which claims of sightings continue to be made.

5. *Reports of fossil animals, i.e., those that became extinct in geological times.* The cryptozoologists' prime example of this category—although it was not rediscovered by cryptozoologists—is the coelocanth, a Mesozoic fish whose descendants have turned up alive and well in this century. The Loch Ness monster, "Nessie," might also belong in this category; some reports claim that "Nessie" is really a plesiosaur. Another well-known type of claim made in this category is that of the possible survival of dinosaurs in Africa. However, as Greenwell pointed out, "this is quite controversial and most paleontologists would give it a zero probability."

6. *Reported new species for which there is no fossil or organic evidence,* such as the giant forest hog discovered in East Africa early in this century.

7. *Animals that have been discovered, for which there are no previous reports or accounts.* These represent completely new species; one such is Megamouth, a large shark discovered in Hawaii for which zoologists had to set up a new species, genus, and family.

Following Greenwell, Roy P. Mackal, a biochemist who serves in the administration of the University of Chicago, reported his investigations in what might be termed "laboratory cryptozoology." Mackal carried out a biochemical investigation of a tissue sample, collected in 1987 on the Florida coast, that may have belonged to the fabled "giant octopus." Although many historical and literary references to giant many-armed creatures

are believed to refer to the giant squid, a fairly well known animal, reports of the giant octopus persist. Mackal's amino acid analyses lead him to believe that the tissue he examined was not whale blubber—as many dismissed it as being, at the time of its discovery—but rather collagen tissue from "either a giant squid or an octopus."

Mackal supported his tentative conclusion with anecdotal evidence of a Bahamian tradition of giant octopuses (not "octopi," cautioned Mackal) and an account of a U.S. Navy sighting of a giant octopus off the Florida coast in 1941.

Now, Mackal said, another carcass appears to be available—"but again, we *don't have the animal, we only have part* of it." He believes that radioimmunoassay could distinguish between giant octopus and giant squid tissue.

Anthroplogist Frank Poirier of Ohio State University, the final speaker of the session, has a unique claim to expertise on the subject of cryptozoology—he's probably the only cryptozoologist ever accused of *being* his quarry! That event took place during Poirier's fieldwork in Kubei Province, China, where he was investigating reports of the "Wild Man." As Poirier tells it, he fell asleep one afternoon by the riverside, scantily clothed, and awoke to the accusations of a frightened crowd. "After all," Poirier admits, "I am considerably taller and much hairier than the local population!"

Reports of the Wild Man have persisted in China for the past 2,000 years, and folklore worldwide includes stories of hairy, brutish, humanlike beings, traditionally reported from remote and underpopulated regions. Poirier gave the examples of the Piltdown hoax and the initial refusal of physical anthropologists to accept that human evolution first occurred in Africa as evidence that "respectable researchers can be misled and often disagree. Sometimes the evidence is there, but its significance is not grasped."

"Do Yeti and the Wild Man fit into this paradigm?" Poirier asked. After all, new animals do continue to be reported. Poirier dismissed attempts that have been made to relate such creatures to the fossil *Gigantopithecus,* which became extinct about 500,000 years ago. Turning to contemporary Chinese reports of the Wild Man, Poirier noted that the reported sightings contain three groups of characteristics: (1) human traits, such as walking bipedally and having no tail; (2) nonhuman traits, such as hairy bodies, lack of language, and eating only raw food; (3) nonhuman primate traits, such as eating vegetable matter, sitting upright, smiling, and chattered vocalization. "Can any creature contain *all* these groups of traits?" he asked.

In the end, "most of what is offered as the best evidence can be explained as otherwise," Poirier said. "No conclusive answer can be given except that the existence of such creatures is highly improbable, and the burden of proof lies with those who hold that such creatures exist."

What would constitute acceptable evidence for Yeti, Sasquatch, or the Wild Man? Either an uncontested film documentary, an actual body, or a live animal, Poirier said. However, he cautioned, "It would be better for such creatures if we never find them. If they exist and are located, they will soon become extinct. We have seen it all happen before, and we are none the wiser for our past mistakes."

—*Lys Ann Shore*

Lys Ann Shore, a writer and editor, reported on other CSICOP conference sessions in our Spring 1989 issue.

Trends in New Age Publishing: Less Pseudo, More Substance?

CHANNELING, crystals, UFOs, and psychics are out. Quality and attention to less sensational aspects of New Age philosophy are in. This, at least, is the trend among New Age books detected by the trade magazine *Publishers Weekly* in a comprehensive report, "New Age: Still Glowing."

The New Age publishing boom shows no signs of abating, but the emphasis has shifted somewhat away from what critics accurately call its "pseudoscientific" aspects.

"This year in New Age publishing, the key words are no longer 'crystals' and 'channeling,' but 'quality' and 'discrimination,' " freelance writer and editor John Bethune reports (December 16, 1988), based on conversations with publishers and booksellers. "Confronted with an evident overabundance of material, some of it judged to be poorly written and ill-conceived, publishers, distributors and retailers with an interest in the New Age movement are placing renewed emphasis on highlighting the enduring values and ideas of the movement rather than its passing fads."

He quotes the executive director of the New Age Publishing and Retailing Alliance, Marylyn McGuire: "This thing called the New Age is just not a narrow category, it is very broad. It includes anything about being better people, having a better world, and being more creative."

Although statistics are difficult to come by, no one doubted that New Age books had seen tremendous growth in the past year. One specialty distributor, New Leaf, carries 11,000 titles. The editor of a New Age monthly, *Body, Mind & Spirit,* said: "The flood of review books coming in is amazing—it isn't ebbing and flowing, it keeps growing. We must get 25 to 50 books a week, and I'm sure we're not getting them all." Said another bookseller, "It's like a flood. I've got so much coming at me that discrimination has become real important."

The editorial director of Crown's Harmony Books refers to quality material becoming "awash in a sea of mediocre books." The marketing manager of Theosophical Publishing House referred to "a lot of really soft material, pablum, in the New Age literature, a kind of feel-good, thinking-good, be-good kind of thing."

Journalist Frederick Levine, author of *The Psychic Sourcebook,* told Bethune the openness of the New Age movement is not sufficiently balanced by critical thinking. Superficial and even exploitative material is the result.

Bethune refers to publishers' complaints about what he calls "an overwhelming excess of low-quality material. . . . With so many New Age books now on the market, the emphasis is shifting from the more sensational aspects of the New Age movement to what are generally described as more serious and enduring works and subjects."

Los Angeles publisher Jeremy Tarcher said: "In the past year or so there has been a significant diminution of interest in channeling, crystals, UFOs, and psychic experience in general, and a rising interest in more solid aspects of the movement."

Crystal books "are definitely taking a dive," a distributor in Berkeley, California, said. The sellers complained about the excess of such books, their extravagant claims, and the soaring prices of crystals. "The crystal books are coming out like crazy," a Charlottesville, Virginia, bookshop owner said. "One I've got now on my sales table claims that crystals will improve your sex life and give you improved energy. I just like stones and rocks, myself. But people are getting confused by the directions that are being given about crystals. It's just crazy stuff, an insult to the intelligence of the public."

The channeling craze likewise appears

to be diminishing. A Seattle New Age distributor estimates channeling books are down by 25 percent. He refers to "a dropping of interest in channeling, definitely." A Boise, Idaho, bookseller says, "A lot of my customers think channeling is interesting, but they don't necessarily think there are some gurus out there who can tell them who they are."

The president of the Association for Research and Enlightenment, the Edgar Cayce group in Virginia, said: "The wave of interest in channeling and getting information from psychics and crystals reflects a search, hopefully genuine, for the meaning in life. . . . I would hope the next stage will be a deeper commitment to understanding that the search needs to be within oneself. If this step isn't taken, there could be a backlash against the whole movement."

Health and healing remain strong New Age topics, and they are seen as its best avenue for moving into the mainstream. Bantam has had great success with *Hands of Light: A Guide to Healing Through the Human Energy Field.* The focus on the human "energy field" would appear to indicate that even though healing and health are mainstream concerns, New Age books are ready, as always, to exploit pseudoscientific concepts.

Some New Age book industry people refer to a need to reconcile the New Age with scientific thinking. But first the authors are going to have to get their intellectual and scientific houses in order. Bethune notes correctly that New Age disciples have not generally applied scientific principles to their theories, preferring instead, in many cases, to simply reject science. "There has been very poor scientific follow-up and validation of their use in healing," says one publisher, referring specifically to crystals.

Harmony books has just published Ted Schultz's *Fringes of Unreason* (see Some Recent Books, this issue) to help rectify this lack of scientific scrutiny. Harmony's publisher, Peter Guzzardi, told Bethune it is "both a serious analysis of basic ideas on the lunatic fringe and a reference work" and takes objective looks at esoteric claims. (For whatever reason, *Publishers Weekly*'s New Age report fails to mention any other books that critically examine the New Age, such as Robert Basil's *Not Necessarily the New Age* and Henry Gordon's *Channeling Into the New Age,* both reviewed in this issue, or Martin Gardner's *The New Age,* all by Prometheus Books. It does carry a witty send-up sidebar by Hester Mundis, author of the new book *Out on a Broken Limb: 101 Ways to Avoid Reincarnation,* by Workman Books.)

Guzzardi points out that although there is a strong spiritual aspect to the New Age movement, "there's a serious interest in science at the heart of it, a quest to know the unknowable. And science is very much involved in that quest."

Bantam, recognizing this, has serious scientific works like Heinz Pagels's *Cosmic Code* and Douglas Hofstadter's *Metamagical Themas* on its New Age list (a matter Hofstadter noted with both amusement and bemusement at CSICOP's Chicago conference last November). Bantam even seriously considered putting physicist Stephen Hawking's best-selling book, *A Brief History of Time,* on its New Age list. "But you will find it on the first page of our New Age catalogue," says a Bantam representative. "Cosmology at its ultimate reaches is a kind of religious quest too."

Ironically, the number-one book on the 1988 New Age bestsellers list, compiled by the New Age Publishing & Retailing Alliance, is Joseph Campbell's (with Bill Moyers) *Power of Myth,* a highly praised work few would think of as New Age at all. And perhaps that's the point. The New Age certainly has pseudoscience and antiscience and nonscience at one end of its spectrum, and those aspects are legitimate targets for scientific concern, especially in this age of disturbing scientific and technical illiteracy. At the other, the New Age deals with matters of basic human values and the universal quest for meaning and significance in an impersonal world. Not so easy to pigeon-hole.

"The New Age is really ideas," says one publisher. "Perhaps that is why there is such an explosion in New Age publishing."

—Kendrick Frazier

Time-Life 'Mysteries' Series Brings Complaints, Criticism

THE BLATANTLY pro-paranormal advertising campaign for Time-Life Books' "Mysteries of the Unknown" series, as noted in our review of the series in this issue, continues to offend scientific-minded people. Many readers of the SKEPTICAL INQUIRER have written us to share their concerns. Typical is this comment from Norman Cutler Smith of Asheville, North Carolina (he sent a copy to the Editor of Time-Life Books):

"I have not read the current Time-Life Books series "Mysteries of the Unknown." However, I object strenuously to the tone of the television advertising, which suggests that these reported phenomena are true supernatural happenings. I will not waste my money or time to read this shameful exploitation of ignorant superstition by a once-reputable publisher."

The Ariadne column of *New Scientist* also fired a few rounds (January 28, 1989). The columnist notes that he had something of the platitudinous reaction "I didn't come here to be insulted" upon receiving Time-Life's promotion mailing. "Particularly galling was that it was addressed to me personally, Dear Ariadne, with 'Ariadne' printed on it in big capitals."

Writes Ariadne: "Discover the facts that have been uncovered and why, even after hundreds of years, the mysteries are still unexplained, the letter said, an enticement that, in the words of Lord Whitelaw, stirred up a lot of apathy, especially as I found that the mysteries are the tired old rubbish, so often debunked, about the Bermuda triangle, Atlantis, flying saucers, strange 'power surges' felt near Stonehenge, signs carved into the Earth's surface and, for all I know, Conan Doyle's fairies, the angel of Mons and the Russians with snow on their boots at King's Cross Station." Ariadne refers to the free gift of "scientifically designed cards" to test yourself and your family for ESP. "You can tell they are scientifically designed because one is a cross and another a star and

New Age Trends: What's In and What's Out

LIKE ANY popular movement, New Age is susceptible to the whims and whimsies of fashion. Just when we'd located the perfect amethyst geode for our coffee table, we hear crystal *objets d'art* are out. To avoid further embarrassment, we asked Paul Zuromski, editor and publisher of *Body, Mind & Spirit* magazine (the largest-circulation New Age magazine in the country) and author of *The New Age Catalog* (Doubleday/Dolphin), to give us his admittedly selective list of what's currently hot and what's not in New Age.

WHAT'S IN

mysticism
goddess worship
the millennium
crystal jewelry
Joseph Campbell
Sedona, Ariz.
oat bran
Shirley MacLaine
Native Americans
shamanic journeys
white magic
creative visualization
Jung
channeling
self-healing
the Amazing Kreskin
natal charts
wedding rings
Ginseng
near-death experiences
spirituality
runes
psychic counselors
The Hero with a Thousand Faces
Unified Field Theory
tarot
rain forests
paper
self-hypnosis

WHAT'S OUT

occult
witchcraft
the harmonic convergence
crystal balls and geodes
Edgar Cayce
Findhorn, Scotland
granola
Shirley MacLaine
American Indians
L.S.D. trips
black magic
going with the flow
Fritz Perls
seances
faith healing
spoonbenders
horoscopes
mood rings
Red Zinger
past-life experiences
religion
Ouija boards
psychotherapists
Zen and the Art of Motorcycle Maintenance
relativity
palm reading
deforestation
plastic
Valium

Publishers Weekly, Dec. 16, 1988. Reprinted with permission.

so on. As a clincher, I can learn why ex-U.S. President Jimmy Carter believes in UFOs. The offer is perfectly resistable."

Blair Macy, an award-winning small-town newspaper editor in northern Colorado, was equally disgusted. Referring to the TV commercials about reportedly mysterious "happenings" around the world said to be surely "more than coincidence," Macy, in a weekly column, writes: "Such magical claims could lead to a wave of mass hysteria, when promoted by a firm as powerful as Time-Life, and we certainly don't need this in our present nuclear age. I see nothing dangerous about people who like to speculate about the paranormal, and perhaps allow their imagination to wander. But there are a lot of pseudo-scientists who would like to cash in on such daydreams, and they certainly should be forced to prove the authenticity of their 'examples' of magic, or visitors from outer space."

Macy then describes the SKEPTICAL INQUIRER, "in which authors challenge all claims by pseudo-scientists of paranormal happenings. I allowed my subscription to expire, but thanks to Time-Life I have hastily sent my renewal. . . . I think it deserves our support."

Readers who wish to direct other comments to Time-Life can write to George Constable, Editor, Time-Life Books, Inc., 777 Duke St., Alexandria, VA 22314.

—K.F.

Vitamin Dowsing: A First-Hand Report

WHAT APPEARS to be a hitherto unreported application of dowsing has recently been observed by this reporter in that hotbed of New Agers, Sedona, Arizona.

While shopping in a Sedona supermarket, I observed with interest a well-dressed young woman of about 20 making a selection of vitamins, minerals, and food supplements from the hundreds of bottles lining the shelves in the health-food section. I noted with interest, and some surprise, that she was dowsing each bottle.

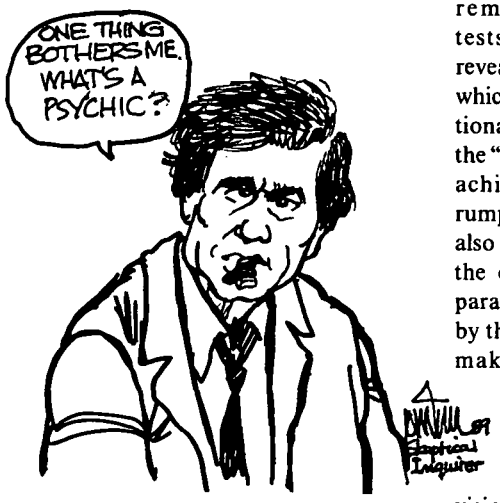
Her dowsing aid consisted of a fine metal chain about 15 centimeters long, with a sharp-pointed crystal about 30 millimeters long dangling from one end. She would hold a bottle horizontally in her left hand, dangling the crystal on the chain from her right hand about 10 to 15 mm above the bottle. Sometimes she would hold two bottles in her left hand to compare the response from each.

After dowsing 15 or 20 samples, rejecting most of them, she made her choices and headed for the checkout counter. I was unable to see the apparently subtle indications of the crystal that dictated her selections.

—Harner Selvidge

Columbo Gets His Psychic: A Rare TV Debunking

PLAUDITS to all those responsible for the season-premier episode of "Columbo" (ABC Mystery Movie, "Columbo Goes to the Guillotine," February 6, 1989). The two-hour episode revolved around a power-seeking psychic, a government-sponsored parapsychology project in remote-viewing, and an experienced magician devoted to exposing psychic fraud (and who was murdered for his trouble). The episode showed that a highly entertaining yet intelligent drama can be made about a supposedly psychic phenomenon without accepting or implying the reality of the paranormal (just the opposite, in fact). With some help from a young magic buff, Columbo (Peter Falk) himself is able to duplicate the "psychic's" striking successes in the remote-viewing tests and then reveals the trick by which (in this fictional test anyway) the "matches" were achieved. The rumpled detective also discovers how the conjuror's apparatus was used by the murderer to make the death appear to be a suicide. Unlike most television mystery dramas with a parapsychological theme, this one didn't resort to a cop-out ending implying that there might have been something paranormal to it after all. It was entertaining "debunking" in grand style.



—*K.F.*

Gleason's Library Reveals Devotion to Paranormal

THE LATE Jackie Gleason was a much-beloved and successful comedian. He was also a devotee of the paranormal. As United Press International reported, a look at Gleason's personal library gives new meaning to the phrase "To the moon, Alice."

Some 1,700 of the 3,700 books in Gleason's collection dealt with UFOs, the occult, and parapsychology. The collection was officially presented to the University of Miami Library by Gleason's widow, Marilyn, on October 25, 1988. She gave the books to the school because she wanted them to stay in the area where the Gleasons had lived for many years. "Some of these books are kind of crackpot," said the university's librarian, Jay Kalvan. "Things like *I Rode in a Spaceship.* He went out of his way to collect books on the occult. He was just personally interested in any unexplained phenomenon." •

The first CSICOP conference in Latin America

Mexico City

Friday and Saturday

November 10 and 11, 1989

Sponsored by the

Committee for the Scientific Investigation of Claims of the Paranormal and the Mexican Committee for the Scientific Investigation of Paranormal Claims

"Magical Thinking and Its Prevalence in the World Today"

Friday, Nov. 10: University of Mexico, Mexico City

8:00 P.M.: Keynote Address by **Mario Bunge,** professor of philosophy at McGill University, Montreal (formerly of the University of Buenos Aires)

Saturday, Nov. 11: Holiday Inn Crown Plaza, 80 Reforma Dr., Columbus Circle, in downtown Mexico City

9:00 A.M.-5:00 P.M.

Simultaneous Spanish-English translation will be provided.

Speakers (partial list):

Paul Kurtz, CSICOP Chairman, professor of philosophy at the State University of New York at Buffalo

James ("The Amazing") Randi

James Alcock, professor of psychology at York University, Toronto

Kendrick Frazier, Editor of the SKEPTICAL INQUIRER

Joe Nickell, author, investigator of the "unexplained"

Mario Mendez-Acosta, Chairman, Mexican Committee for the Scientific Investigation of Paranormal Claims

Serasin Mercado, professor of psychology, University of Mexico

Victor Vasquez, professor of psychology, University of Mexico

7:00 P.M.: **Banquet** ($30.00 per person, by reservation only)

Registration fee: $60 for admission to all sessions (meals and accommodations not included).

For registration form and accommodations information, write or call:

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MARTIN GARDNER

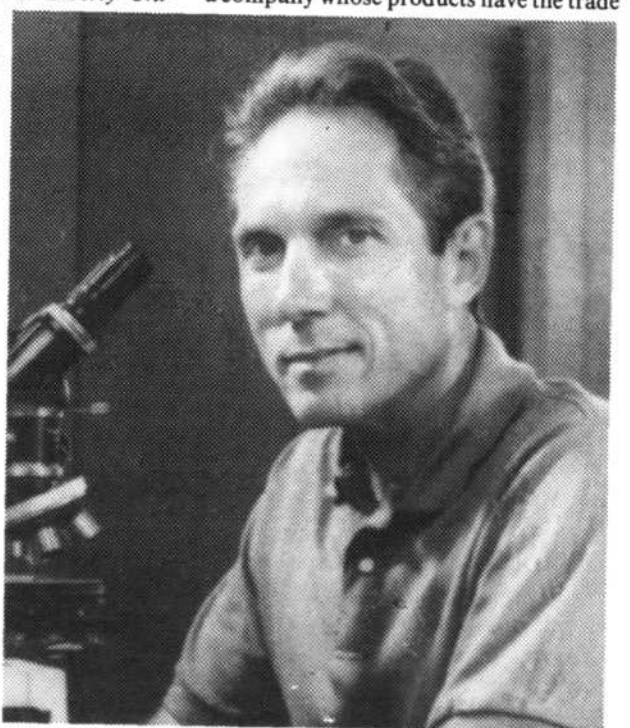
Notes of a Fringe-Watcher

Robert Gentry's Tiny Mystery

THE MOST aggressive of the nation's "young earthers"—creationists who believe the earth and all its life were created six to ten thousand years ago—is Robert Vance Gentry. He was creationism's star witness at the 1981 creation/evolution trial in Little Rock, Arkansas, but his chief claim to fame is that, unlike other creationists, his research has been published in such mainline journals as *Science* and *Nature*. *Jerry Falwell's museum at Liberty University* has a dramatic exhibit of Gentry's claims. You'll even find him in *Who's Who in America*.

Born in Chattanooga, Tennessee, in 1933, Gentry obtained a master's degree in physics in 1956 at the University of Florida. Three years later he and his wife became converts to Seventh-Day Adventism as a result of watching George Vandeman's weekly telecast "It Is Written." Gentry has held posts as an engineer with private firms, taught at several colleges, and from 1966 to 1984 was a physicist at Columbia Union College, an Adventist school in Takoma, Maryland. For 13 years he had a contract with Oak Ridge National Laboratory that allowed him to use their costly equipment. It was not renewed after his participation in the Arkansas trial.

For the past several years Gentry has headed his own firm, Earth Science Associates, in Knoxville, Tennessee. The firm is funded by Elsworth McKee, an archconservative Adventist millionaire who owns and manages McKee Bakery, a company whose products have the trade



From *Creation's Tiny Mystery*

Robert V. Gentry, aggressive "young earther."

name of "Little Debbies." It was McKee who paid for the printing of a book by Gentry, which we will discuss later.

Seventh-Day Adventists are fundamentalists who take every verse in the Bible to be accurate and divinely inspired, and who have almost the same reverence for the writings of their prophetess Ellen Gould White. Convinced that evolution is the work of Satan, Gentry took it upon himself to find irrefutable evidence that the earth was created about 6,000 years ago in six 24-hour days. At first he thought he had found this evidence in the form of superheavy elements in the earth with half-lives too short to account for their presence. (A half-life is the time it takes half the atoms of a radioactive substance to disintegrate.) When this research proved flawed, Gentry turned his attention to polonium halos, or "Po halos" for short.

Po halos appear at the cross-section of concentric microscopic spheres found in the crystals, especially mica, of certain Precambrian granites, and in such substances as coal and zircon. When a tiny sphere is sliced in half, you see concentric rings, or halos. Everyone agrees that the halos are produced by radioactive decay of isotopes of polonium, element 84. What scientists have called a "tiny mystery" arises from the fact that polonium isotopes have extremely short half-lives, ranging from a few microseconds to several months. If geologists are right in assuming it took millions of years for hot magma to cool and form granite, then the Po halos should have vanished long before the crystals formed. So how is it that the halos are there? It is Gentry's claim that their existence proves, beyond all doubt, that the granite crystallized almost instantly after God created the earth *ex nihilo*.

There is, of course, an enormous amount of hard evidence that the earth is billions of years old. As Frank Press, president of the National Academy of Sciences, compressed it in a letter to Gentry in 1987: "I cannot agree . . . that one small piece of data invalidates the vast body of evidence from geology, astronomy, biology, radiodating, the fossil record, genetics, and other fields that taken together irrefutably show that the age of the earth is about 4.5 billion years. . . ."

It is true that the halos are a tiny mystery, but all scientists who are not creationists, as well as many creationists, expect the mystery to be solved either by some overlooked aspect of nuclear physics or by some unusual geological process. Many conjectures have been made. Because there is no consensus, Gentry concludes that his work "stands like a Rock of Gibraltar" against the tide of evolution. He has issued a ringing challenge to his detractors. Synthesize a piece of granite with Po halos, he tells them, and he will admit defeat.

Geologists were quick to point out that to synthesize granite one would first have to produce magma and that would require heat and pressure far beyond any obtainable in a laboratory. Even if magma could be made, hundreds of thousands of years of slow cooling would be necessary to form crystals with Po halos. As one geologist put it, "Gentry has presented mainstream scientists with a totally unrealistic proposal, then faulted them for their silence."

How does Gentry escape from such proofs of an ancient earth as furnished by carbon dating, tree rings older than 6,000 years, evidence from polar ice caps, from limestone cave formations, from salt domes, and from a hundred other geological features, not to mention half a dozen techniques for estimating the ages of rocks, fossils, and human artifacts? Like Velikovsky, who supported his wild scenarios by invoking laws unknown to science, Gentry invokes what he calls at least three great "singularities"—occasions when God intervened to suspend the "uniformitarianism" of evolutionary theory.

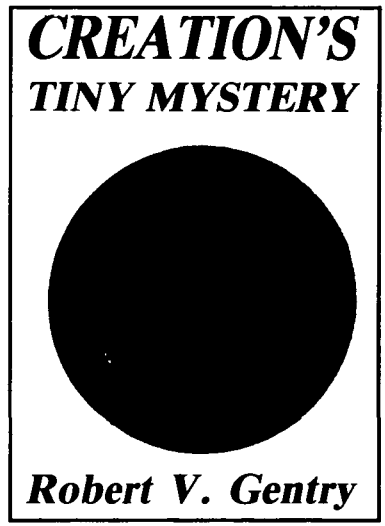
The first great singularity was the six-day creation, about 6,000 years ago, of the entire Milky Way galaxy. How about the light reaching Earth from stars in the galaxy that are more than 6,000 light-years away? (The galaxy's radius is about 30,000 light-years.) This light, Gentry is persuaded, was created "on the way." And light from galaxies billions of light-years away? In 1987 astronomers observed the explosion of a supernova more than 150,000 light-years from Earth. This is not a problem for Gentry because he allows that other galaxies are much older than ours.

In Gentry's bizarre cosmology—he calls it the RSS model (Revolving Steady State)—the universe has spherical symmetry with a finite number of galaxies revolving around the universe's center. At the center, which he suggests is a few million light-years beyond the constellation of Orion, is nothing less than the Throne of the Almighty!

Why Orion? Because Ellen White, in one of her famous visions, saw the New Jerusalem descending to earth, at the Second Coming, through an "open space" in Orion. I had supposed that Adventists had long ago abandoned their quaint claim that God's Throne lies beyond an open space in Orion, but no. I recently came across a booklet by Vandeman, *Look! No Doomsday* (1970), that contains a chapter headed "Rescue from Orion."

Because the motion of our solar system can be measured relative to the microwave radiation that pervades space, a glow that astronomers believe to be left over from the big bang. Gentry considers this radiation to furnish an absolute reference frame for measuring motion. This of course would demolish relativity theory. Gentry actually believes that the microwave radiation has rendered relativity theory obsolete but that the world's top physicists are too stupid to realize it.

The second great singularity was the Fall of Man. The third was Noah's Flood, which Gentry dates at about 4,300 years ago. This monstrous deluge produced all the earth's sedimentary rocks and all the fossils in those rocks. The dinosaurs are no longer with us because they were too big to go on Noah's ark. How does this scenario circumvent such evidence for an old earth as carbon dating and the other criteria mentioned above? Simple. Within each singularity God modified many physical laws. Radioactive decay, for example, was greatly speeded up. This generated enormous heat that caused intense volcanic activity and other upheavals, and presumably boiled away the flood waters. Naturally, the accelerated radioactive decay would account for false carbon-dating. Similar changes in physical laws explain the rapid formation of tree rings, striations in polar ice, the formations of limestone caverns, salt domes, coal beds, and so on. After the Flood, God kindly restored the laws we know and love today.



Jacket of Gentry's self-published book.

All this is detailed in Gentry's privately published *Creation's Tiny Mystery* (1986). The second edition, a 348-page paperback (1988), with 11 color plates of halos, can be obtained by sending $13.95 to the author's Earth Science Associates,

Box 12067, Knoxville, TN 37912. The book includes a stirring account of the 1981 Arkansas trial, transcripts of testimony by Gentry and others, reactions of the media, a lengthy bibliography of Gentry's many published papers and letters, and an appendix that reprints major documents.

Gentry and his wife, Patricia Ann, live in Powell, a small town close to Knoxville and not far from where I live in North Carolina. In February 1989 I drove to Knoxville to meet with them. I was less interested in discussing Po halos, about which I know nothing, than in finding out how seriously Gentry takes Adventist doctrines. I was surprised to find him as ill-informed about his church's early history as he is about geology. He accepts Ellen White's visions and writings as inspired by the Holy Spirit, but he was not familiar with *The White Lie,* an explosive recent book by disenchanted Adventist minister Walter Rea. It contains detailed documentation of the extent to which White shamelessly plagiarized long passages from other writers, repeating many of them word for word. The Gentrys leafed through the copy I brought, but had little to say about it. I would be amazed to hear they have since tried to obtain a copy.

I was more astonished to learn that Gentry had never read *The New Geology,* by Adventist George McCready Price. As I emphasized in a chapter on Price in my recent book, *The New Age,* this is *the* classic defense of a young earth and the Flood theory of fossils. Gentry seemed to know nothing about Price's clever arguments against uniformitarianism, although his own Flood theory is pristine Price. Nor was he aware that until the 1930s Adventist literature maintained that the Second Coming was sure to occur within the lifetimes of some who had witnessed the great meteoric shower of 1933. Jesus said that "this generation" would witness his Second Coming, and Adventists take the phrase to mean, not the generation of his listeners, but the generation that would see various signs in the heavens, such as falling stars.

Gentry assured me that Adam and Eve had no navels and that trees in Eden had no rings, but he allowed that the couple were not bald even though hair seems as good evidence of past history as belly buttons. He believes that Eve was created from Adam's rib. When I said this struck me as demeaning to women—that the first mother would have been fabricated from a minor male bone—Gentry reminded me that a rib was one of the few bones that could be removed without damaging a person.

Gentry buys it all. Lot's wife turned to salt, Moses parted the Red Sea, Jesus walked on the waves and turned water to wine. Gentry was unconcerned about Jehovah's seeming cruelty in drowning all living babies. As he justified it: God could foresee that, had the little ones survived, they would have become evil adults. How about sinless dogs and cats? Well, that was a price that had to be paid. Why did God send lightning to destroy Moses' nephews when they failed to mix incense properly for a sacrifice? The ritual was so holy, Gentry explained, that violating it was a terrible crime. He had no objection to God telling Moses to kill all the men, women, and children of a conquered tribe, but was silent when I asked why God allowed Moses to keep all the virgin women as slaves. He had no comment when I told the story of Jephtha's sacrifice of his daughter. I had the impression I was bringing up parts of the Old Testament he had either not read or not thought much about.

Gentry's most vocal critic is J. Richard Wakefield, a Canadian amateur geologist. I recommend two of his papers: "Gentry's Tiny Mystery—Unsupported by Geology," in *Creation/Evolution,* 8 (1988):13-33, and "The Geology of Gentry's Tiny Mystery," in the *Journal of Geological Education,* 36 (1988):161-165. An unpublished article, "The Con-

tinuing Saga of the Po Halo 'Mystery' " (1988), is obtainable from Wakefield, 385 Main St., Beaverton, Ontario, Canada L0K 1A0. "Radioactive Halos: Geological Concerns," by creation Kurt Wise, in the *Creation Research Society Quarterly,* 25 (March 1989): 171-180, is a vigorous attack, followed by Gentry's lengthy rebuttal.

"Gentry's 'Tiny Mystery'—Not So Mysterious," by Lorence Collins, a geologist at California State University, Northridge, will appear in the Spring 1989 issue of *Creation/Evolution.* It is a major effort to explain the natural origin of Po halos by fluids containing radioactive material that migrates through fractal zones and low-pressure veins in granite long after it has cooled. Gentry will of course disagree. Whether other geologists will accept Collins's explanation remains to be seen.

What does the Adventist church think of Gentry's views? Not much. Robert Brown, a conservative Adventist at the church's Geoscience Research Institute, Loma Linda University, Loma Linda, California, told me that the church did its best to avoid criticizing Gentry until last year, when he demanded a confrontation. Its opinion was expressed in a strongly negative review of Gentry's book by five members of the institute, including Brown, in the institute's periodical *Origins,* 15 (1988):32-38.

The authors stress Gentry's inconsistency in assuming that God accelerated radioactive-decay rates for all elements except polonium, presumably to put Po halos in the rocks as evidence for a young earth. (Some halo-producing isotopes other than polonium have half-lives of thousands of millions of years.) They point out that granite intrudes itself in older rocks that contain fossils and that some fossil brachiopods are found within granite. As the authors put it, "One could hardly argue that God would place fossils in granite he was creating."

Adventist leaders long ago abandoned Price's young-earth view. They do not agree on exactly what to make of evolution, but the trend is toward accepting an ancient earth, while retaining the belief that all life was created six to ten thousand years ago, and that the fossils are (as Price argued) records of life destroyed by the big flood. However, the church now recognizes that Price's self-taught geology bristles with blunders. This explains why the church has allowed his many books to go out of print.

Gentry clearly sees himself as ordained by the Lord, during these final days before He returns, to give the world positive proof of a young earth. Now that his own church has refused to endorse his Po halo evidence, it will be amusing to see how he carries on his divine mission. Stay tuned. •

For details
of the first of the
CSICOP Seminar Series
see page 446 of this issue

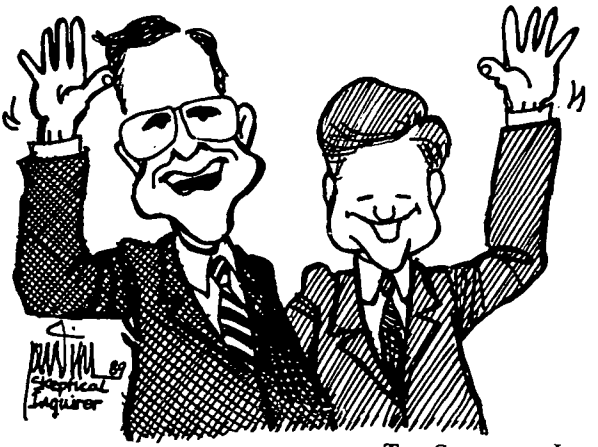
ROBERT SHEAFFER

Psychic Vibrations

AS THE NEW administration slowly places its stamp on "official Washington," political observers are watching for clues to see what the future has in store for Bush and Quayle. But the soothsayers aren't waiting that long, and the *National Enquirer* reveals that one leading palm-reader has already proclaimed the Bush and Quayle team to be "a wonderful match," predicting that the new administration will be "a real force for Congress to contend with." At this point the reader is probably somewhat dubious, not necessarily from disbelief in the arcane science of palmistry, but from doubt that the president and vice-president would sit still and allow a swami appointed by the *National Enquirer* to gaze over their palms.

Ah, but you see, the marvels of modern technology are such that it is no longer necessary for the owner of the palm to come into proximity with the sage who professes to read it. The *National Enquirer* got hold of campaign photos showing Bush and Quayle waving at crowds with palms upraised, enlarged them, and passed them on to Marion Coe Palmer, a noted practitioner of chiromancy. Gazing at the First Palm of the land, and at the one only a life line away, the appropriately named Palmer discovered, thank goodness, that both men are very intelligent, thoughtful, ambitious, caring, and so on: in short, that the terms psychics, astrologers, and palmists employ in their "cold readings" will be seen as descriptive of the president, the vice-president, and nearly anyone else.

Elsewhere, ABC News reported on Inauguration Day that the outgoing astrologer-general of the Reagan administration, Joan Quigley, had advised President Bush to "beware of the sun in Gemini." Quigley also prophesied in the *Washington Post* that, during April, the First Lady "may be criticized for something to do with the White House." However, the change in administrations does not remove the occult from the halls of government. *U.S. News and World Report* writes that at least 25 percent of members of Congress are interested in some form of psychic powers or fortune-



telling. Among those whose involvement and interest in the occult is said to be keenest are House Speaker Jim Wright, Senator Claiborne Pell, and Congressman Charlie Rose.

* * * * *

In what is clearly one of the most remarkable and unambiguous signs of the policy of *glasnost,* Soviet citizens, like those of our own country, can now open their newspapers and read their own horoscopes. The *New York Times* reported this January that, for the first time since the Russian Revolution, the Soviet newspaper *Moskovskaya Pravda* has published a horoscope. In it, astrologer Eremei Parnov observes that Mikhail Gorbachev, as a Pisces, has the stars in his favor. So, if perestroika actually succeeds in putting a chicken in every Soviet pot, we'll know that Pisces had a hand in it.

* * * * *

Longtime readers of *SI* will remember the reportedly profitable prophecies of fluctuations in silver futures by Keith "Blue" Harary and Russell Targ of Delphi Associates in 1982. They claim that, using the alleged ESP technique of "remote viewing," Harary netted profits of $120,000 for some fortunate and anonymous investor, a feat that has somehow failed to bar success in the futures market to those who must compete without psychic powers, and for some reason has not been repeated by Harary and Targ themselves.

The *San Jose Mercury News* reports that Harary has now sued Targ over the latter's "National ESP Test" in *Omni* magazine, claiming that by linking his name to it, Targ has invaded his privacy and held him up to the ridicule of his peers. Targ counters that the worldwide publicity resulting from their 1982 psychic cornering of the silver futures market placed Harary's name in the public domain, where one may presumably do with it what one wishes. Targ explained that he hired Harary in 1979, when he was already a well-known psychic. Harary, who was known as "Blue Harary" in those days and had achieved considerable fame for his alleged out-of-body travels and for his psychic communication with his cat, would seem to have already earned a special niche far beyond Targ's power to add or detract.

* * * * *

Fallout from the epidemic of alleged "close encounters" started by one "Mr. Ed" in Gulf Breeze, Florida, continues to rattle and fracture the UFO community. Mark Rodeghier, scientific director of the J. Allen Hynek Center for UFO Studies, clearly feeling the pressure from his skeptical comments on the case (*SI,* Winter 1989, p. 130), has now softened his original position from "probable hoax" to "a potentially significant UFO case, but one that remains unproved." (UFO organizations, you see, depend on subscriptions and donations to keep the doors open, and groups that become too skeptical soon find both drying up.) However, veteran UFO-researcher Richard Hall hints in the Mutual UFO

Network's *MUFON Journal* that he is now preparing "a skeptical statement about Gulf Breeze," adding that MUFON's portrayals of Mr. Ed as a "pillar of the community" are "at best, incomplete and misleading." James Moseley reports in his *Saucer Smear,* a gossipy insider's newsletter, that two of MUFON's most active and prominent members, Ray Fowler and Barry Greenwood, have "resigned over this mess," as have several other officials. However, Moseley himself subsequently interviewed Mr. Ed in Gulf Breeze and came away impressed by his apparent sincerity.

The still-anonymous Mr. Ed complains to MUFON that he should not be held accountable for omissions and misstatements he made back when he was claiming the witness was a "Mr. X," before he stepped forward and admitted the photos presented as evidence were his own. He says he was merely protecting himself so that no one would know "X" was really "Ed." He claims to have captured some liquid that fell from a saucer, which was still "bubbling vigorously" 19 days later. Whether this liquid was still mysteriously "bubbling" when it was analyzed in a laboratory, and what the laboratory found it to be, he does not tell us. Ed challenges his critics to refute the other 135 people in Gulf Breeze who claim to have spotted UFOs, including four who claim to have seen alien beings, six who spotted blue beams of light from the saucers, and nine who claim experiences of "missing time." Moseley reports that two more anonymous photographers, "Believer Bill" and "Alice," have produced between them seven new UFO photos of their own. (Gulf Breeze seems to be a town consisting of people who have only first names.) And Betty Hill, who invented the whole business of "missing time" when her vacation trip was allegedly interrupted by the Zeta Reticulans back in 1961, doesn't understand what all the fuss is about. "UFOs are a *new* science," she writes, "and *our* science cannot explain them." UFO groups, she complains, examine UFO cases like the one at Gulf Breeze far too critically. "I have seen hundreds, maybe thousands of pictures taken by the general public and never shared with UFO organizations because of their attitudes and behavior." •

JOHNSON ONCE MORE FAILS TO GRASP THE CONCEPT OF THE PARANORMAL.

The New Age in Perspective

Paul Kurtz

THE "NEW AGE" is an amorphous term used to designate a range of popular beliefs and attitudes. It includes under its banner widely disparate individuals and points of view. Broadly conceived, it is a protest movement, expressing a distrust of science and seeking to develop new levels of "spiritual" awareness.

The New Age was popularized in the last decade by Marilyn Ferguson in her influential book *The Aquarian Conspiracy,* although it is rooted in the late 1960s with the importation of Asian ideas and values—Zen Buddhism, Transcendental Meditation, Yoga, and so on. A number of theorists and writers are now identified as spokespersons for the movement, for example, Baba Ram Dass, David Spangler, Judith Skutch, and George Leonard. In a sense, the New Age, in its rejection of the establishment, is a continuation of the counterculture of the 1960s and early 1970s, although today it goes beyond the ideological protests of that era. It has penetrated many aspects of American culture: the publishing industry, the mass media, and even corporate America has embraced its techniques and values.

Some proponents of the New Age maintain that it is basically a religious or quasireligious movement. New Agers are critical of what they call "scientific materialism"; they think that there are hidden "spiritual dimensions" to reality that cannot be plumbed by the experimental methods of science. They say that science has let us down by creating a scientific-technological civilization that denigrates humanistic values and threatens human survival. They maintain that the emphasis on objective methods of knowing neglect the "subjective dimensions of experience" and the intuitive and mystical sources of truth. Reminiscent of Kierkegaard, they equate subjectivity with truth.

This poetic-epistemological protest is similar to that which characterized the Romantic movements of the past. Reason is too confining, New Agers say. It ignores whole areas of human experience. One can surely agree that the aesthetic, emotional, and moral parts of human nature should not be denigrated, that human beings are a highly complex and subtle species not easily categorized by any one science. On the other hand, it is difficult to evaluate subjective claims to truth unless they are clearly defined and can

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be corroborated by independent evidential observations and can meet the standards of rational coherence. How can we determine whether some particular experience is a genuine source of truth or a purely narcissistic illusion unless it can be disentangled from personal bias and examined by intersubjective criteria? The psychological, behavioral, and social sciences consider all claims to truth to be hypotheses until they are verified. We should avoid a temptation to solipsistic reverie, for we need always to confront our subjective perceptions with the external world.

When CSICOP decided to devote its Chicago conference last November to an examination of the New Age—virtually the first scientific and scholarly symposium to do so—we did not question all the claims of the New Age; some of its ideas and values may appear reasonable. For example, New Agers support the environmental movement and recognize the need to protect nature's ecological balance. They point to the need to develop a global consciousness and to consider the human species as a world community, to transcend narrow parochial loyalties and develop a new global ethics. (However, the bizarre form these attitudes took two years ago, when the "Harmonic Convergence" of José Arguelles was proclaimed by New Agers, was less worthwhile.) Many people share these sentiments—they are not unique to the New Age movement. New Agers also draw upon the human-potential movement and the humanistic psychology of A. H. Maslow and Carl Rogers, emphasizing the values of human creativity. They are critical of dogmatic institutionalized religion and seek "new sources of religious experience." Indeed, many Christian fundamentalists are in turn critical of the New Age and consider it to represent a "counterfeit spirituality."

The CSICOP Chicago conference avoided these philosophical and moral issues and focused primarily on pseudoscientific New Age beliefs. Many New Agers have accepted a number of highly questionable claims that do not stand up to critical evaluation: Astrology plays a prominent role, although there is as yet no empirical evidence to support it. This is also true of "channeling," which is simply nineteenth-century spiritualism embellished with new terms more appropriate to the electronic age. There seems to be little effort on the part of New Agers to validate the claims of channelers, who instantly go into a trance state and deliver messages they claim come from "entities" on the "other side." Likewise, belief in reincarnation has been revived by New Agers, although today hypnosis is used to "regress" people to their past lives. Shirley MacLaine claims that she lived one of her lives as a prostitute during the French Revolution and was ultimately beheaded. It is perhaps unfair to consider MacLaine a leading guru of the New Age, but she surely represents its most popular expression.

In any case, New Agers embrace many ill-defined, unverified claims and simply accept as true a wide range of psychic phenomena—precognition, psychokinesis, astral projection, levitation, clairvoyance, and so on. Added to this is "crystal power," which seems to have little discernible effect but to enrich the merchants of crystals. Of special concern is the immense popularity of "holistic" medicine and alternative forms of therapy. Dr. Bernie

Siegel, in his best-selling book *Love, Medicine, and Miracles,* claims that his patients can will away their cancer, although the lion's share of his evidence is anecdotal. Similarly for UFO-abduction phenomena, which like the "evidence" for past lives, is based upon regressive hypnosis.

I should point out that we invited several New Age leaders to present their points of view at the conference, including Shirley MacLaine, Kevin Ryerson, and others, but without success. Nevertheless, I am pleased to report that several speakers represented the New Age perspective and provided balance to the conference.

In line with CSICOP's desire to expand its areas of inquiry beyond classical paranormal claims, the program included sessions on cryptozoology and graphology, with advocates and critics alike in both fields. It is our view that when a field has rigorous peer review and journals providing adequate critical evaluation, there is little need for CSICOP to play a role. CSICOP prefers to focus primarily on the borderlands of traditional science and submit unusual claims to critical scrutiny. Again, we do not begin with the premise that a field is illegitimate and that its claims are untrue; we simply wish to examine the evidence pro and con to see if there are objective grounds to support it.

The Chicago conference was an extremely useful meeting. It demonstrated that many New Age premises rest on shaky ground—at least in its paranormal dimensions—and that it is really the old spiritualism in modern garb. •

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A New Age Reflection in the Magic Mirror of Science

A full understanding of the popularity of New Age ideas must include an examination of scientific hubris, the failure of science to answer many of the core questions of human existence, and the role of science in undermining religious systems important to Western culture.

Maureen O'Hara

AT THE HEIGHT of the Middle Ages, it was believed that life on this earthly plane of existence was controlled by forces in other realms to which ordinary people had very little direct access. Life was brutal and it was short. People turned to religion, in part out of their spiritual and intellectual needs to have explanations for the existential facts of life and also as a comfort with which to face their terrors in the face of uncontrollable powers both natural and supernatural. They sought to align themselves with beneficent forces with the hope that in exchange for dutiful obedience they would be protected on this plane and welcomed to the next. Before the Renaissance, authority to speak for God and to mediate with the otherworldly entities resided largely with the ecclesiastical classes. In childlike dependence, prince and pauper alike turned to priests and merlins for interpretations of reality upon which to base their lives.

But even as children eventually begin to doubt the truths of their parents and need to "find out for themselves," our medieval forebears were eventually to challenge religious authority. Taking from the Greeks the idea that we are capable of making conscious choices about our existence, Renaissance

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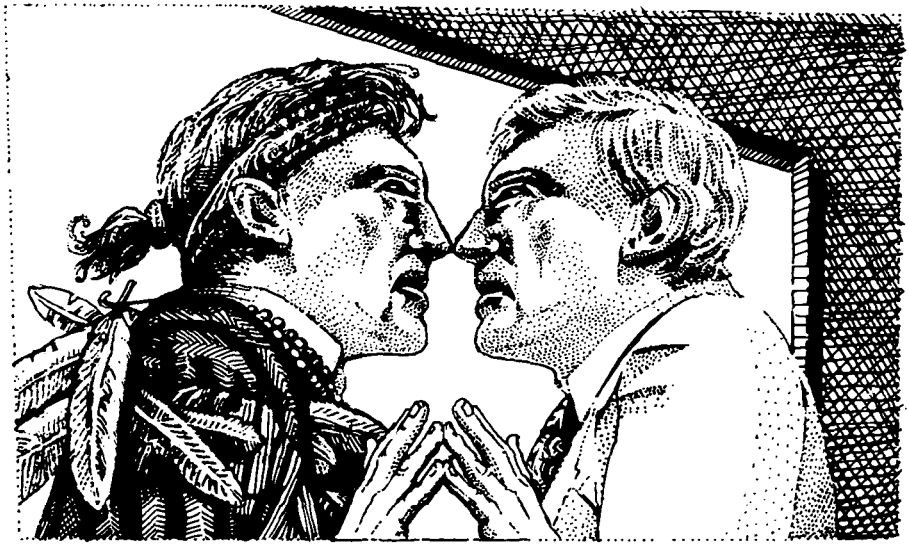

Illustration by Pat Linse.

thinkers wanted ways to test various hypotheses regarding Nature so as to be able to make the best or the truest choices. With a renewed affirmation of the dignity of human consciousness and a scientific quest to "read God's mind"— directly, by contemplation of his works—our skeptical ancestors began to break out of their intellectual and spiritual dependency. Protest movements ran rampant over Europe, and authority to name truth on any other than ecclesiastical matters was gradually taken over by secular authorities—in particular, science.

By its successful challenge to superstition, by the institutionalization of the will to doubt, and by its recognition of the need for objectivity and neutrality, science invented innumerable methods by which to separate, as François Jacob has said, "what could possibly be true from what is actually true." In a scant 400 years European culture leaped from feudal agrarianism, where men and women lived essentially the same life as had been lived for 2,000 years before that, to the modern technology-based world. It seemed as if there were no limits to science. It seemed that Descartes's desire was becoming a reality. Through science and mathematics we were indeed becoming the "lords and possessors of the Universe," to be finally emancipated from Nature, from our ignorance, and from our night terrors. Science promised that a unitary theory was forthcoming with which we could define reality with certainty and predictability. We laughed at our ancestors' weird beliefs and felt sorry for our Third World brethren who still consulted shamans in grass skirts. It may have been hyperbolic for Nietzsche to declare God dead, but by any measure it seemed He had become optional.

By the 1920s, the medieval priests had been replaced by the scientists, especially the physicists, who in turn began to define reality for everyone else. In the popular mind at least, papal infallibility had been replaced by a new superstition—scientific infallibility. Gradually the sciences took over the universities. The best and brightest minds were drawn to the sciences,

and the humanities, classics, theology, literature, philosophy, and other disciplines came to be regarded rather like curricular stocking-fillers that gave cultural roundness to students while they mastered the more important modern courses in science and technology. By the time C. P. Snow described his "two cultures," there was no doubt, in the mind of the mass culture at least, that it was science, not the humanities, that held the hope of the future.

We are all now well aware that scientific progress carries a mighty high price tag and, perhaps more seriously, it is now clear that the hopes that science could deliver some litmus test for truth have failed to be realized. The goal of a unitary theory of all reality has turned out to be fundamentally unreachable, and some philosophers are beginning to argue that, by eliminating the subjective knower from the process of apprehending the known and severing subject from object, we have inadvertently reduced the human self to a subordinate or marginal status in the knowledge game. Objects are real, persons are partial and illusional, therefore objects are more reliable than humans. Is it any wonder we need to narcissistically inflate ourselves and to seek for "miraculous" powers?

In this post-Heisenberg, post-Freud, post-Marx, post-television, post-constructionist, post-modern world, we have finally come to realize that there is no system of truth with which to adequately account for all aspects of being. We also know that in any investigation—even the hardest science—the starting assumptions of the investigator are inextricably involved in the view of reality apprehended. We are stuck with a world more Kantean than Lockean, in which there exist multiple and often competing stories of reality that are co-created by the members of a community that adheres to a shared set of axioms. Whether, like traditional cultures, you believe your story is passed down from the gods, or like scientific cultures, you believe it was discovered (or better, invented) by other men and women, the success and stability of a story is determined by its power to account for the existential facts of life, and by its power to permit manipulation of the physical world and to address the psychological needs of the community. Across the world's cultures there are many stories—poor stories, better stories, good stories, and changing stories.

The story that now dominates Western culture is *scientific materialism.* It has been a spectacularly productive story. But successful as it has been in providing answers for many questions about the world that haunted our ancestors, it has been singularly unsuccessful at solving others. People still starve by the millions, our environment is being polluted quite deliberately, wars are still being fought, bigotry and injustice are rampant, children are still murdered by their parents, and we still have no answers from science for our "ultimate concerns," as Paul Tillich put it—our spiritual questions.

In the eyes of increasing numbers, despite its undeniable technological triumphs and its exuberant self-confidence, science has nonetheless let us down. Furthermore, science has been slow to admit its limitations, with scientists customarily dealing with such concerns, not by pointing to the limits of science, but by deeming questions not amenable to answers from within

By rendering transcendental explanations 'unrealistic' and declaring them superstitions, science weakened religion's ability to provide access to the sacred, symbolic, ritualistic, or transcendental dimensions of experience.

the scientific materialism story "unscientific" and by inference irrelevant. Spiritual questions became the new heresies, and the scientific establishment the new inquisitors. Nowhere, ironically, was this more true than in psychology. And it is obvious to all, but especially those of us in clinical practice, that the psychological and spiritual cost has been very high. By rendering the transcendental explanations "unrealistic" and declaring them superstitions for the intellectually faint-hearted, by undermining the broad sweep of the Christian story, secular science weakened—for many, destroyed— traditional religion's ability to provide access to the sacred, symbolic, ritualistic, or transcendental dimensions of experience that for eons had offered humanity a way to address its nonmaterial concerns. Although for practicing scientists, science itself may provide a glimpse of the Infinite and be every bit as mystical an experience as can be found in established religion, Loren Eiseley, Jacob Bronowski, Lewis Thomas, and Carl Sagan notwithstanding, modern science has been unable to inspire the lay public with anything like the same kind of wonder. On the contrary, people have become confused, dehumanized, and isolated.

We are born into a world where in place of a unified view of reality provided by either science or established religion, or even as an easy co-existence of the two, there exist numerous and competing reality stories. In the United States we have a constitutionally protected freedom of religion and a constitutionally enforced separation of religious and secular worlds, and we are each left free to construct for ourselves an individualized story with which to address our uncertainties. And this is no easy matter, for as one writer put it recently, "When the witchdoctors disagree, what are ordinary folks to do?"

It is into this abyss of uncertainty that the mythmongers, pseudopriests, and pseudoscientists enter. So, I would argue, do drug dealers, entertainers, psychotherapists, and fundamentalists of all stripes. And so do neuropsychiatrists, admen, and "spin doctors." And it is in this "psychosocioepistemological" context that we must understand the New Age movement.

It is significant to remember that the present New Age movement has its origins in the counterculture of the sixties and early seventies. Early inspiration came from the writings of Abraham Maslow, Eric Fromm, Rollo May, Carl Rogers, and others. This generation of psychologists was the first to reject scientific materialism as the basis of the study of human existence. They recognized the need to reaffirm the personal, experiential dimension of all knowledge, and along with feminist, black, and radical social critics

they exposed scientific "objectivity" in the social sciences as a myth. They set out to develop a science adequate to the study of the whole person, with a life, a consciousness, a community, and a history. They wanted a science that would not reduce us to the status of rats, would not be suspicious of our embodied subjectivity or our spiritual yearnings, but instead would affirm the higher dimensions of consciousness and celebrate our humanity.

With their affirmation of the significance of the person and his or her experience, these writers struck a culturewide nerve of alienation in American youth. Their bold, rebellious writings and anti-authoritarian methodologies were taken immediately to heart by a generation that was refusing to be "folded, spindled, and mutilated." At the stage of their lives when their minds were most awake and open, when the "learning curve" was at its peak, this generation was being urged by its heroes to "question authority," "not to trust anyone over thirty," to "lose their minds and come to their senses," that the "personal was political," to "turn on, tune in, and drop out." In consciousness-raising groups, deconstruction became a participatory sport. The European, patriarchal, scientific materialist, Judeo-Christian world-view, which was taken as "reality," was systematically examined. As the epistemological position of the late twentieth century was opened up to massive scrutiny by a host of disenfranchised people, they came to the conclusion that the only trustworthy authority was individual authority and the only reliable truth was personal "gut feelings."

Once this generation had broken the bonds of intellectual traditions they were free to literally play with ideas from fields as wide apart as astronomy and Zen Buddhism. Slipped from their disciplinary moorings, ideas, phenomena, tricks, theories of being, spiritual teachings spread about them like a giant metaphysical smorgasbord. In bookstores perfumed with incense and marijuana, you could find the works of Malcolm X, Rumi, Ram Dass, Foucault, de Beauvoir, and Carl Rogers side by side with Tarot cards, quartz crystals, and books on cybernetics, ecology, and quantum physics. The only criteria anyone had (or needed) were that it had emotional appeal and that it was "true for me." And at first there was a general feeling of lightness, excitement, and freedom. Young people were taking bits and pieces of vastly different "belief stories" and winding them together in a multihued, customized religion that fit perfectly with the countercultural ideology of personal choice as the basis of an emancipated society.

Like their medieval ancestors these youngsters believed their destinies were being manipulated by powerful forces beyond their influence. They saw a massive military-industrial complex scooping them up and sending them off to a war they did not understand. Their emotions and appetites were being stimulated by a vast new technology—television—that could persuade them to buy what they did not need and to vote for people who lied to them. They said as a group, "The only person I can rely on is myself, the only truth I can believe in is one I have arrived at through my own experience, and the only commitments I will make are those I decide upon myself." In a very real sense this was a bold and glorious position and held the promise

that another humanistic renaissance—a New Age, as they put it—was in the offing. This time it would be a constructionist world, where we could create new utopian beliefs, and from them we could construct new—and better—realities. No longer would we have to consider ourselves insignificant accidents in the story of reality; we were to become co-creators.

By the late seventies it was beginning to become clear that our old nemesis hubris was upon us once more. The prophesied Age of Aquarius was crumbling into a thousand and one personal sillinesses, grandiosities, and individualistic "separate realities." Having destroyed all their trusted sources of wisdom, these counterculture, intellectual latchkey kids had to make it up as they went along. What none of us foresaw in our enthusiasm to proclaim the personal was that in a world where an insider's view becomes the only view, and everyone's private subjective truth comes to have the same epistemic status as everyone else's, there is no truth at all—only power. Power of the press, power of marketing, power of coercion, and ultimately force. What we had thought was a solution was in fact just another piece of the problem.

Although it is easy to debunk and easy to laugh at the crystals and spoonbending psychics, in my view we must look at the New Age movement as a symptom of a much graver illness that infects the late-twentieth-century soul. The New Age movement represents an attempt to create a world-view that can ease the pain of the alienation felt by a population that has discovered the limitations of its science, that has lost faith in its religious traditions, that recognizes that its "reality" is at least in part a social construction, that has seen its government authorities caught in lies and corruption, that has been psychologically manipulated by millions of manufactured images. It is both a product of and an answer to the hubris of secular science. It is a protest against a science that negated the centrality of human consciousness in its story of reality and that has yielded a society in which individual persons have been reduced to the status of "consumer," of everything from automobiles to ideologies. That the New Age movement, as a religion, ultimately falls into hubris and fails to deliver should not blind us to the fact that so does scientific materialism.

We live in dangerous times. We all have to learn to live in a world where different truth systems coexist. If we don't, and instead take the position that one truth system is superior to all others, we could easily end up in global holy wars. It may be that eventually some new global consensus will be fashioned from our multiplicity and new myths will emerge that are suitable for a post-modern planet, but we daren't hold our collective breath. If we are to navigate a future where the multiple needs of a planet can be addressed, despite multiple versions of how it all works, we need to know how to look for agreements across and between truth systems. (I am not suggesting here that I believe all truth systems to be equivalent in either their explanatory power or moral content, only that when we evaluate a system of thought, an approach to knowledge, a system of truth, we acknowledge that every system, even our own, is limited and reflects the life lived by those who adhere to its axioms.)

In some ways the New Age movement, at least in its existential and phenomenological core, has been wrestling with post-modern complexities for going on 20 years. At an average board meeting of the Association of Humanistic Psychology, for instance, negotiations may take place between me, a debunking feminist skeptic; New Age physicist Fritjof Capra; homeopath Dana Ullman; Jeffrey Mishlove, the Berkeley parapsychologist; psychologist Rollo May; Ruben Nelson, a prairie Protestant futurist; Dennis Chestnut, the president of the Association of Black Psychologists; and assorted others. Even though I cringe at some of the ideas upon which my colleagues base their lives, and I often find myself in vigorous dialogue, somehow business gets done, and it usually gets done with mutual respect and with humor, humanity, and integrity. Maybe we are not even close to a New Age, but it certainly gives me some grounds for hope for our planet.

I have argued for skepticism and scholarship at numerous New Age gatherings. I echo many of the the criticisms that were made at the Chicago CSICOP conference. But as a woman who as a science student had to swallow as "fact" obnoxious pseudoscientific sociobiological notions like blaming the impulse of men to rape on "selfish genes," I hope that at least some skepticism will be directed toward scientific materialism.

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The New Age: The Need for Myth in an Age of Science

The New Age movement is a symptom of a fundamental rift in society between those who emphasize subjective, inner experience on the one hand, and those who stress objectivity and rationalism on the other. This rift may be repaired by a synthesis of the two points of view.

Ted Schultz

IN 1972, I DROPPED out of college, abandoned my home state of Illinois, and set off in pursuit of the budding New Age movement. One year later, at the age of 20, I was living in the heart of San Francisco's Haight-Ashbury district, happily immersed in the whole range of twentieth-century mysticism, spirituality, and alternative culture: yoga, Tai Chi, Buddhism, Taoism, meditation, vegetarianism, and various occult and psychic practices. In marked contrast today, more than 15 years later, I'm a graduate student studying evolutionary biology at Cornell University.

What happened? While most folks would consider the transformation from mystic to scientist to be a transition of the most radical sort, I really haven't changed very much. My motives in 1972 were the same as they are now: to place myself as close as possible to genuine sources of wonder. But as I became intimately acquainted with various New Age cosmologies that claim to describe how the universe really works, I came to an important realization: They couldn't all be true—many of the scenarios were in fact mutually contradictory. And as it became increasingly obvious that I couldn't believe all of what I encountered in New Age San Francisco, it also became obvious that some kind of objective standard was needed for separating what was true from what was unproved.

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The emotions, revelations, and understanding imparted in New Age-style counseling sessions can be real and life-changing despite the fact that the contexts are not empirically true.

This simple realization lies at the heart of scientific empiricism; and armed only with this and a reasonable model of the natural world, it was perhaps inevitable that I would be led to the far more promising fountains of wonder that are currently the primary focus of my attention. On the other hand, I would not have spent years exploring the New Age had I not enjoyed many beneficial and rewarding experiences that, as I have come to understand in retrospect, proceeded from a side of the New Age that does not lend itself to empirical testing. It deals with the subjective dimension of human experience, the dimension of emotions, dreams, inspiration, intuition, imagination, the dimension of the symbolism and mythology of the unconscious mind. Objectivity and rationalism are of little use here, and unless the skeptic takes into account the power of New Age systems to access these "nonrational" realms, he or she will fail to understand the primary attraction of the New Age.

Most adherents (including myself in the early seventies) are drawn to the New Age less for the explanatory power of its contradictory cosmologies than for the tangible effects on their lives generated by "subjective arts" like trance induction, meditation, physical therapies (like yoga and massage), psychological counseling, and the pleasure of love and friendship within a shared social context. For example, many astrologers function as psychological counselors, providing their clients with a cartography of personality based on astrological symbolism. Likewise, genuine insights into unconscious processes may be generated via the symbolic imagery of "past-life regression" hypnotherapy. The emotions, revelations, and understanding imparted in such New Age-style counseling sessions can be real and life-changing despite the fact that the contexts of astrology, reincarnation, psychic healing, and meditation on "crystal energy" are not empirically true. For individuals primarily concerned with psychological growth and relatively unconcerned with formulating empirically accurate models of the natural world, it seems a small step from entertaining fictional ideas in a therapeutic context to swallowing the accompanying cosmologies hook, line, and sinker.

Whatever potentially useful tools for psychological growth may exist in the New Age, they are obscured to a degree directly proportional to the blurring of the distinction between subjective psychological experience and objective truth. In the New Age this blurring is extreme, and subjectivity has become elevated to the lopsided status of sole arbiter of the truth. This reliance on subjectivity has led to a distrust of the scientific enterprise that, like many elements of New Age thought, can be traced back to the occult movements of the late 1800s, especially Theosophy. In her books *Isis Unveiled*

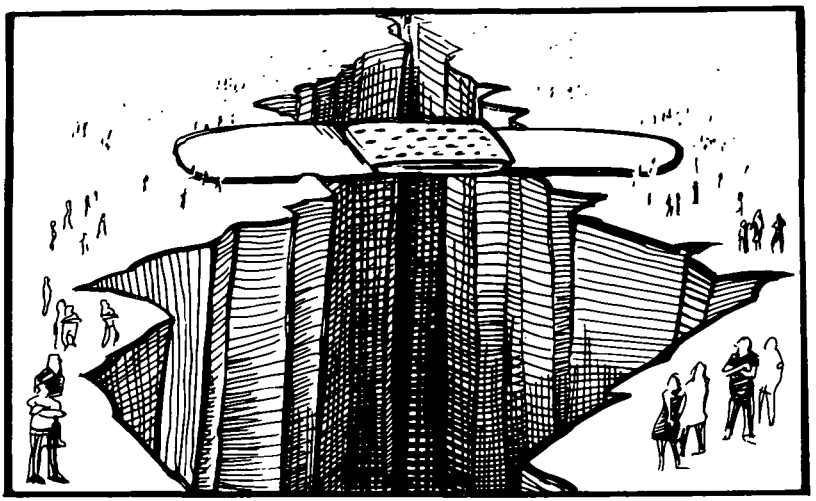

Illustration by Pat Linse.

and *The Secret Doctrine,* the founder of Theosophy, Madame Helena P. Blavatsky, repeatedly attacks what she derisively calls "materialistic science," contrasting it to "occult science." In occult science you don't need tiresome experiments or painstaking observation to find out what's going on in nature. Instead, all you have to do is close your eyes and meditate upon your subject of interest. Blavatsky's books set forth a bizarre history of the universe revealed in just this way. Two of her disciples, Charles Leadbeater and Annie Besant, even produced volumes on "occult chemistry" based on their clairvoyant perceptions of atoms and molecules.

Today's New Age "channels" conjure up information about ancient civilizations or beings from other planets in a similar fashion; likewise, the subjects of past-life regression learn about their previous incarnations while hypnotized. If these methods really worked, think of what a revolution in science they'd bring about! We could dismantle all of our expensive research equipment and learn everything through clairvoyance and meditation. But, alas, this is not to be. There's simply no way to discriminate between supposed "information" received in this way and pure fantasy, and while the cathartic psychological benefits of such practices may be high, the information content is virtually nil. No objectively verifiable evidence has ever been produced in the tens of thousands of channeling sessions and past-life readings that have taken place. Never, for instance, has an all-knowing channeled entity told us the correct latitude and longitude of some buried, ancient temple, nor has a past-life memory ever led us to a file in an old public-records office that proved the existence of a previous incarnation. This lack of corroboration suggests the far simpler explanation, lost to most New Agers in their disregard for objectivity, that such personalities and memories are the products of the unconscious mind.[1]

A number of things can be done to help mend the unnecessary rift in society between those who are concerned with inner, subjective, frequently

irrational realms of human experience and those who are concerned with physical, objective, rationally comprehensible realms. First, we need to accept that both are important. It's easy to mock New Agers, but I think a far more profitable enterprise would be to research and understand those unmet human needs that are compelling tens of thousands of people to turn to the New Age for satisfaction. We must somehow learn to nourish these nonrational dimensions in ways that are not antithetical to rationalism and science.

Second, empiricists should continue to test New Age claims about the natural world, preferably as neutrally and sympathetically as possible. Naturally there is not enough research money, nor are there enough researchers willing to sacrifice their valuable time, to check out every bizarre claim; but surely the most popular ones, believed in by tens of thousands of people, deserve to be tested. The true believers will most likely remain unconvinced, but I learned something from my experience of editing a special issue of *Whole Earth Review* in 1986 that was devoted to critiquing New Age claims: There are many undecided people who are open to critical examinations of the paranormal, as long as they perceive that the studies are fairly and objectively carried out.

Third—and most difficult—we have to offer people something better. I would suggest that it is the perennial human need for mythology that fuels not only the New Age movement but many other irrational religious movements as well. Novelist Ken Kesey once offhandedly commented: "Facts are dull. Stories are interesting. We're up to our noses in facts. We want Story. We need Story." The late mythologist Joseph Campbell pointed out that our culture has outgrown the mythologies of the past. In the light of modern science and society, these ancient world-views no longer hold any explanatory power—but they still hold emotional power. Since we haven't replaced the old myths with new ones, some of our contemporaries periodically reconstruct hybrid mythologies out of the rubble of the old stories, investing them with belief and then dogmatically defending them. This is as true of the current wave of Christian fundamentalism as it is of the New Age.

The people who feel the need for a larger myth most acutely go out and invent their own. Some of these modern myths, drawn from the raw material of the unconscious minds of their creators, are actually quite imaginative. At the very least, they can be regarded as a kind of early-warning system telling us that if we can't supply a myth—a Story with a capital "S" that *includes* science and rationalism—then a host of eccentrics will supply their own versions, versions that most likely contradict what we have empirically learned about the natural world.

For those of us who value rationalism and objectivity, the challenge presented by the New Age and other twentieth-century supernatural mythologies is this: A living myth must be constructed that incorporates an understanding of the physical and natural sciences. Such a task is contrary to the traditions of science, which normally avoids any kind of larger philosophizing. It is contrary as well to most mythmaking, which generally

employs an overdose of supernaturalism and a disdain for rationalism. Perhaps the job requires a new sort of individual, a kind of popularizer-of-science/philosopher/artist. Whatever the answer, this synthesis is a goal well worth pursuing, and perhaps the first place to look for clues is in the fanciful and contradictory New Age myths of the late twentieth century.

Note

1. For a description of the unconscious processes underlying such personalities and memories, including psychological phenomena that superficially suggest paranormal forces at work (e.g., cryptomnesia, automatisms, dissociation), I refer the reader to my essay "Voices From Beyond: The Age-Old Mystery of Channeling" in *The Fringes of Reason: A Whole Earth Catalog* (New York: Crown, 1989). •

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Channeling: Brief History and Contemporary Context

Although the term is new, channeling has been around for centuries. Its essence is hassle-free religion. One gains meaning in life and escape from anxiety from pre-digested 'wisdom' without any commitment or sacrifice.

James E. Alcock

SPOON-BENDING is out; channeling is in. This latest psychic craze is being embraced by many thousands of sincere believers, enlightening their minds and often lightening their pocketbooks. "Channeling" describes what supposedly occurs when an individual serves as a conduit for some otherworldly entity to communicate with people of this world. It can take many forms: The channeler might be wide awake, in a trance, or even asleep ("dream channeling"). The channeler may speak or produce automatic writing, or even operate through a Ouija board.

Channeling is essentially the mediumship of the late nineteenth and early twentieth centuries dressed up in new clothes. Parapsychologists realize this too. They have shown a remarkable lack of interest in the channelers' claims. Most parapsychologists consider the channeled communications to be simply the product of the channeler's mind and experience (Anderson 1988).

The immortal entities who take advantage of the sudden abundance of channelers to speak to the people of this world most often bear names of a biblical or a mythic quality: Archangel Michael, Moses, the Invisibles, Ramtha, and even Jesus, are examples. Despite the erstwhile obscurity of many of the entities, they have been able to propel the people who channel them into some fame and often considerable fortune. For example, Penny Torres, a California housewife, was rocketed into prominence by channeling a 2,000-year-old man called Mafu, who teaches that humanoid colonies live under the earth and that extraterrestrials live among us.

J. Z. Knight, who channels Ramtha, is the best-known and most finan-

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cially successful of the channelers. Ramtha supposedly was born on Atlantis and conquered the entire world 35,000 years ago. Knight gives us some insight into the process of channeling: She claims that in order to channel Ramtha, her soul first must leave her body. To do this, she raises the vibrations of her soul so she can meet Ramtha at his vibratory level; then she experiences the sensation of moving down a tunnel and traveling toward a light that becomes larger and larger. (Note the similarity here with reports of near-death experiences.) Once she enters that light, she knows that her soul has left her body and been replaced by Ramtha; her own essence has transcended to another time and space (Mahr 1987).

Not all entities have such arcane origins as Ramtha and Mafu. Elwood Babbitt, another leading channeler, channels Einstein, among others, and at least two channelers serve as mouthpieces for John Lennon.

Although the term is new, channeling has been around for a long time. It is sometimes claimed that all shamans and prophets, including the Oracle of Delphi, Moses, and even Jesus Christ, were channelers, but a less heady view places the origin of channeling with the renowned mystic Emanuel Swedenborg (1688-1772), who was the first Western medium in that he conversed with the souls of departed men and women rather than just with spirits (Shepard 1978). An accomplished and prolific scientist, at age 55 he resigned his university appointment and became dedicated to the study of the spiritual and occult. He would lay in trances for days on end, conversing not only with the souls of the recently departed but with Moses, Abraham, and Jesus Christ as well.

The next major milestone in the history of channeling occurred in 1848, when Mr. and Mrs. John Fox of Hydesville, New York, heard a number of mysterious rappings in their home, rappings that seemed always to occur in the presence of two of their children, Kate (1841-1892) and Margaret (1838-1893). By assigning a different number of raps to each letter of the alphabet, the rappings were deciphered as being messages from the world beyond. The Fox sisters subsequently enjoyed a worldwide reputation as mediums, starting an interest in mediumship that was to endure well into the twentieth century. Although they confessed in later years that they had created the rappings themselves by using their toes, ankles, and knees, even today there are some who disbelieve their confessions.

An important figure in the history of channeling is Helene Petrovna Blavatsky (1831-1891). In 1875, Blavatsky founded the Theosophical Society, an organization dedicated to study of the occult. She traveled the world in search of manifestations of the supernatural. She claimed to have direct astral access to two Tibetan mahatmas, and in 1888 she "channeled" on their behalf a book entitled *The Secret Doctrine,* which became an occult tour de force.

Edgar Cayce (1877-1945), well known for his supposed ability to diagnose people's illnesses at a distance, is now being retroactively hailed as a channeler as well. It is claimed that he "channeled healing and prophecy to six thousand people over a forty-three year period" (Mahr 1987). Yet, by Cayce's own

description, he was not a channeler: No guides ever claimed to be using his body, and when he communicated with the dead, the information supposedly emanated from his own subconscious (Westen 1988).

The most recent wave of channeling began with the 1972 publication of *Seth Speaks* by Prentice-Hall. The book was prepared by Jane Roberts (1929-1984) and her husband, Robert Butts, and supposedly presents the communications of Seth, the first "unseen entity" that came to be accepted by large numbers of people. The interest produced by Seth developed to the level of frenzy when Shirley MacLaine began her New Age writings about entities, channeling, and related themes. Like a latter-day Madame Blavatsky, MacLaine has ranged the world in search of spiritual understanding. In 1983, her book *Out on a Limb* became a best-seller, with more than four million copies being sold. Because of her fame, this book brought many people to the occult bookshelf who otherwise might have stayed away. Three years later, her ABC-TV miniseries introduced millions of others to the notion of unseen entities.

What do these eternal entities have to tell us now that they can so readily communicate with this world? Their basic message, which reflects well-established themes found in occult literature, is that we are spiritual and immortal beings in a universe that is essentially spiritual. We move through a series of embodied and disembodied lives until we eventually unite with God, and indeed, within each of us is some form of projection of God. By learning to contact that part of God within us, we can harness a force that will allow us to surmount our problems and find happiness and success. We create our own realities; and so if we want to be happy, we simply need to create a happy reality. There is no need for us to follow a guru, for we are as gods, each one of us.

This message is presented in different ways by different channelers. Often it is hard to discern it from the noisy claptrap in which it is packaged. Indeed, modern channelers are responsible for some of the most outrageous rubbish imaginable, often delivered in almost childishly silly accents and peppered with repetitive clichés. Consider, for example, some of Ramtha's pseudoarchaic prose:

> I be that which is termed indeed, servant unto God Almighty, that which is called the Principal Cause, the Light Force, the Element, that which is termed the Spirit, that which is conclusive all of Itself, that which is termed the All in All, that which is called life indeed" (Mahr 1987:21).

Ramtha might be well-advised to contact Moses or Joshua for some advice on style.

We now know that the trance mediums of the late nineteenth and early twentieth centuries were almost certainly fraudulent, the whole lot of them. Even Madame Blavatsky was condemned as a fraud by some who investigated her. Are today's channelers simply cheating? While Professor Graham Reed in the following article discusses some psychological aspects of channeling

The Seth materials must be viewed as less than extraordinary. . . . We cannot discriminate between fraud and the possibility of unconscious production.

that might absolve some channelers from charges of insincerity and fraud, such charges no doubt are fitting in many cases. However, the channelers present a product conveniently resistant to verification or falsification. Most of the information they provide is difficult to assess because of its quasi-philosophical nature. And because the communicating entities usually claim to be exalted beings who left their incarnations a very long time ago or were never incarnated physically in the first place, there is no record to be found of their earthly existence, and no questions to be asked to check the accuracy of their recall.

Why would channelers bother to channel if they were not honest? For one thing, it brings them considerable attention, and for another, it brings them money. The Seth books sold by the hundreds of thousands. People pay up to $1,500 for a seminar with J. Z. Knight's Ramtha, and she has been able to gross between $100,000 and $200,000 for an evening's work! Knight admits that she earns millions of dollars a year from her appearances and the sale of Ramtha materials (Westen 1988).

What about the Seth books? Since they seem, for many people, to stand a league above the other channeled texts in terms of quality and metaphysical surface appeal, they merit some additional discussion. The Seth materials were dictated over hundreds of sessions but *almost always without witnesses;* Seth apparently spoke at a slow enough pace for Jane Roberts's husband to write down the utterings verbatim using a *personal* shorthand. He did not even use a tape recorder, saying that he found it more personal to write out Seth's comments (Roberts 1977). Roberts was conscious during the Seth sessions. Indeed, she reported that it was often difficult for her to know where she stopped and Seth began.

Jane Roberts was an author and poet who as such must surely have worked to develop her literary and creative skills. Indeed, long before Seth, she was producing poetry that in her husband's words "clearly reflected her intuitive understanding of some of the concepts Seth came to elaborate upon much later" (Roberts 1977:11). She was also an avid reader. She and her husband freely admitted to having studied Buddhism, Zen, Taoism, shamanism, voodooism, and the like, and they admitted that there is a similarity between Seth's pronouncements and the contents of some of those belief systems.

In light of all this, the Seth materials must surely be viewed as less than extraordinary. There certainly was the time and the talent for fraud to play a role, but we cannot discriminate between that possibility and the possibility of unconscious production. Indeed, at one time Roberts herself considered

that maybe all the Seth material emerged from her own subconscious. At any rate, given these circumstances, there seems little need to consider the involvement of any supernatural agency.

There is a good lesson here, however. Readers are often impressed by what seems to be an outpouring of metaphysical thought that seems beyond the intellectual capability of the writer. They then take this as an indication that there must be truth to the claim that some supernatural being was involved. Yet superficially impressive writings can readily be produced by an inventive even if otherwise pedestrian mind, particularly if that mind has been exposed to other literature in that domain.

Most people require some sort of philosophical structure in order to be able to find contentment in life. This philosophical structure becomes much more important when one's belly is full and the roof does not leak, when one has time to contemplate one's relationship to the rest of humanity and to the universe as a whole.

It should not be too surprising that many people from all backgrounds and professions have embraced channeling, for its essence is hassle-free religion. One gains meaning in life and escape from existential anxiety without the commitment and the conformity that cults and sects demand. There is no proscription of the pleasures of the flesh as there is in mainstream religions; there are no temptations to avoid, no sins to eschew. The entities' hedonistic and narcissistic wisdom is also predigested and therefore brings no need to wrestle with philosophical enigmas and no lifelong quest for truth.

There is a clear danger in seeking advice from channelers, or at least in following it: People are diverted from trying to grapple in a rational and realistic way with the difficulties of living. For most people, probably all that is lost is a bit of money for whatever comfort was gained. But if one has real problems and real distress, the pastiche of pop psychology and metaphysics offered up by the channelers may prove to be as deleterious for the psyche as the fake treatments proffered by medical quacks can be for the body.

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The Psychology of Channeling

Channeled 'messages' are at a low level of inventiveness. Their style of production and associated claims are classical examples of dissociation.

Graham Reed

TO DATE, the topic of channeling has not attracted much attention among psychologists, and it may well be correct that there exists no particular phenomenon requiring explanation. However, several aspects merit observation from the psychological viewpoint. I will address a central question: What psychological processes underlie the behavior of channelers? The question will be examined from three points of view: (1) cognition, (2) motivation, (3) psychopathology.

The best data available for the study of the intellectual activities of channelers are the spoken messages they produce, as represented by recordings, transcripts, and a profusion of published works. Much has been made of the sagacity and profound insights communicated by such messages. These alleged qualities have been regarded as clear proof of the messages' supernatural origins because, it is argued, the channelers themselves have neither the erudition nor the intellectual power to produce such material without help. But in actual fact, if the messages are examined objectively, ignoring their assumed origins, they prove to be simplistic, repetitive, and extremely vague. They quite lack the clarity, the tightness of argument, and the succinctness of expression that characterize productive thinking. On the contrary, they seem to consist solely of strings of loosely associated gobbets of naive ideas and verbal formulae. They are well within the intellectual capacity of channelers of even moderate education. What they do require is high and facile verbal fluency, together with a loosening of cognitive controls.

Perhaps the most important "law" running through modern psychological theory is the principle of "hierarchical integration." This concept was crucial to Bartlett's theory of memory, to Piaget's theory of cognitive development, and to Erikson's theory of personality. It can also be traced in many other areas of psychology, such as perception, reasoning, motor skills, and social

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organization. In brief, the principle states that informational input is assimilated into one or more mental structures, termed *schemata.* These are active, dynamic organizations, continually changing as they accommodate to new input. They interact with other schemata, producing higher-level syntheses or superordinate schemata. This hierarchical process continues throughout life and accounts for increasing cognitive sophistication, concept development, and emotional adaptation.

Now, obviously, hierarchical integration does not always occur, and mental activities often take place at lower levels, when ideas are simply strung together without vertical development. Much rote and associative learning is of this type, as are cases where clues necessary for the solution of an argument are ignored. Inattention may result in input not being effectively schematized, and so not assimilated in a productive way. What happens, in effect, is that data and ideas are associated in nondynamic chains rather than epigenetic syntheses. I would submit that this simple chaining—of input, precepts, verbal catch-phrases, etc.—is exemplified by the reported products of channeling.

As we are dealing here not with vertical development but with horizontal chaining, it is tempting to refer to the latter as "lateral thinking." But this term has been preempted by de Bono (1977) in his discussions of creativity. However, de Bono was not debating the dichotomy between syntheses and simple chaining. He was referring to the short-circuiting of conventional thought patterns by the linking of disparate concepts to form a new and unexpected concept. This idea of unexpected, novel syntheses has been at the core of most approaches to creativity. What is proposed here is that there is a spectrum of lateral chaining. At the top end of this spectrum is the production of dynamic and novel creations as described by de Bono. Lower down are a wide range of unusual but exciting ideas. At the very bottom lies "speaking in tongues," which is the production of streams of speechlike but nonsemantic sounds. This is an interesting phenomenon in

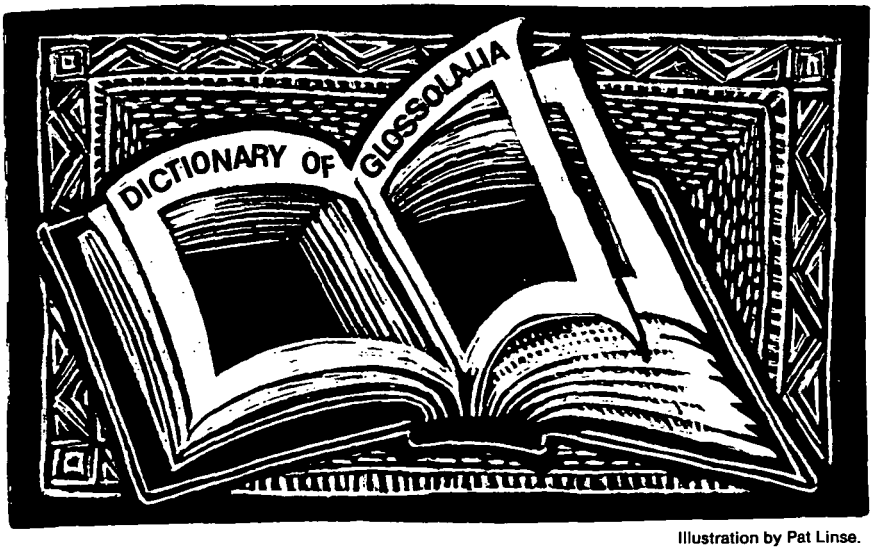

Illustration by Pat Linse.

Channeling is rewarded by social recognition and esteem . . . [Also] the speaker's views are attributed to somebody else. This alibi gives subjective security, which engenders confidence and fluency and improves the performance.

its own right, with decided similarities to channeled messages. The speaker in tongues is usually excited in the context of a religious gathering. The audience attributes the speaker's gibberish to the Holy Ghost or some other prestigious source. The speaker's blathering carries no semantic import, but the hearers assume that it must have some meaning—obscure but vested with divine profundity. Channeled products are not, of course, gibberish. But the "messages," as I noted, are intellectually on a low level, being trite, naive, and clichéd.

What makes channelers do it? Clearly, the activity answers a variety of needs, three of which may be indicated here.

1. *Ego-enhancement.* Like several other forms of verbal activity, channeling is rewarded by social recognition and esteem. It produces, at least among believers, attention, respect, gratitude, and even affection. As may be attested by teachers, politicians, judges, and ministers, having other people listen to one's voice is in itself highly gratifying. Particularly is this so when the performance makes few demands upon the speaker in terms of preparation, presentation, or pedagogy.

In channeling, there is an additional advantage. The speaker's views and judgments are attributed to somebody else, so that the speaker himself is alibied. As with academic lecturing, citing an authority leaves the teacher less vulnerable to negative criticism or attack. A positive feedback circle occurs here, too; the alibi gives subjective security, which engenders confidence and fluency. These improve the performance, which in turn increases audience appeal and reduces even further the possibility of negative or critical response.

2. *Compensation.* Engagement in channeling provides a counterweight against the perceived drabness and lack of excitement of the individual's everyday life. The individual is elevated to the position of seer, oracle, and spiritual adviser. From an engagement in prosaic and little-appreciated routines, she or he is suddenly credited with occult or divine talents.

It should be recognized that this compensatory activity is not unlike artistic expression, but it involves creative achievement at only a very low level.

3. *Material rewards.* There is no need to emphasize this factor here. Suffice it to say that the successful channeler can gain high monetary return for minimal training and capital investment. The entrepreneur who introduces channeling franchises will undoubtedly make a fortune.

It has sometimes been asserted that channelers are mentally ill people. This is surely a suggestion that invites consideration, though it must be pointed out that simply to attach a diagnostic label to somebody achieves little in

itself, at least from the theoretical standpoint. To be of help beyond the purely categorical level, such a label must offer some enlightenment in terms of etiology or wider implications. Before proceeding, it must be pointed out that psychopathology relies crucially upon the study of *form* rather than *content* (discussed in Reed, 1988). Our comments regarding cognitive aspects of channeling were derived from considerations of the contents of channelers' messages. To assess the possibility of psychopathology, we must focus upon the form of channelers' experience. Fortunately, abundant reports of this are contained in the channelers' accounts, being implicit in what they report as constituting channeling itself.

Let us start by considering the possibility of psychotic disorders, these being most commonly suggested by the "mental illness" school of critics. It is true that the behaviors manifested by channelers during their se'ances bear uncanny resemblances to certain psychotic symptomatology.

1. From the clinical point of view, channelers' reports are by definition classifiable as systematized delusions. The very fact that the channeler asserts that she or he is occupied by somebody else would in other circumstances be sufficient to justify the diagnosis of a psychosis.

2. Similarly, channelers consistently report experiences that are technically auditory and often tactile hallucinations. Such reports, if made by psychiatric patients, would certainly cause great concern to clinicians.

3. Channelers manifest dramatically what are termed the "formal thought disorders" characteristic of schizophrenia. They report, as normal components of their channeling experience: (*a*) "thought insertion," where thoughts from external sources intersperse the individual's own thinking, (*b*) "broadcasting of thoughts," where one's thoughts are believed to be publicly available, (*c*) "thought withdrawals," where naturally occurring thoughts are believed to be removed, (*d*) "thought-blocking," where the stream of thought is interrupted.

4. By definition, the channeler is demonstrating a "blurring of ego boundaries," where there is confusion about the limits of individuality and a disturbance in the sense of self. Some authorities argue that this experience not only is symptomatic of schizophrenia but actually constitutes the disease.

In short, not only are some channeling experiences ones normally taken to be symptomatic of affective psychosis, they include all the hallmarks of schizophrenia.

However, debate about whether some or all channelers are psychotic is misplaced. In view of the symptoms outlined above, how can the matter be in question? Simply because channelers are able to turn the "symptoms" on or off at will. True psychotic symptoms are not under conscious control. If they are deliberately manifested, this would be taken, in the psychiatric clinic, to constitute malingering.

If channeling experiences are not attributable to psychosis, can they be termed neurotic or due to personality disorder? In fact, they do include certain components regarded clinically as attributable to one or the other of these.

1. "Depersonalization," where the individual feels in some way different,

changed, or unreal in relation to the environment, and "derealization," where the individual feels as usual, but senses that the environment has changed. These experiences are usually transitory, although they may occur frequently. They are commonly associated with anxiety states; patients with fragile ego controls who are suffering from insecurity and tension are particularly susceptible. The symptom may be chronic, in which case the sufferer is categorized as suffering from a "depersonalization syndrome."

2. "Ego-splitting," where the subject feels as though he is detached and actually outside of himself. This is a not unusual reaction to stress in normal people, being precipitated by fear-invoking situations. It is commonly reported among neurotic patients, whose thresholds of fear and anxiety are presumed to be lower than those of their more robust counterparts.

3. "Hysterical amnesia," where the subject seems to suffer from a loss of identity, being unable to remember any details of his or her life to date, while retaining language, formal knowledge, social skills, and so on. This is often associated with the so-called dual personality, or multiple personality, that has so excited public interest in recent years. Here the subject vacillates between two or more identities, manifesting quite different traits and characteristics, including speech habits and styles of expression. Some such individuals are aware of the existence of their "other self" and can discuss themselves in a detached way. Others manifest hysterical amnesia for the "other" personality. Multiple personality was a topic of scientific interest in the final decades of the last century. Investigations declined when it was realized that hysterical patients tended to produce symptoms that they knew to be of interest to their doctors. Of relevance to our present concern is the fact that at the time many of the patients, as described in detail especially by French and German psychiatrists, not only manifested dual personalities but were clairvoyant, telepathic, or mediumistic. Their idiosyncracies came, as it were, in one package, which does not seem to have been regarded as unusual by their investigators.

4. "Trances" and "trancelike states," where a condition similar to sleep is induced by suggestion or the ingestion of drugs.

All the anomalies I have mentioned are classical examples of *dissociation.* That is to say, they involve temporary alteration in the normally integrated functions of consciousness or identity. Traditionally, dissociative states have been associated with hysteria or the hysterical personality (character). The great French authority Janet (1920) concludes that the hysterical personality reflected instability of psychological integration, which resulted in dissociative experiences. Abse (1974) presents an authoritative review and discussion. The current edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM 111) collates the symptoms listed above under their own heading of "Dissociative Disorders." Other characteristics of the hysterical personality type are a need for attention (love, appreciation, etc.), posturing, shallowness of affect, lying, plausibility, and likability.

Kraepelin, a father of European psychiatry cited by Schneider (1925), described the hysterical personality as displaying emotional responses, a delight

in novelty, vivid imagination, striving to be in the limelight, and a tendency to cheat. Schneider himself referred to such individuals as "attention-seeking psychopaths": "The most striking way of dealing with this passion for attention is pathological lying. For this the individual needs to be endowed with certain powers of fantasy and invention. . . ."

In summary, channelers may reasonably be regarded as persons of hysterical personality, displaying classical dissociative features. Their motives are characteristic of their personality type, including ego-enhancement and a need for attention. Channelers' statements (guidance, advice, etc.) evince simple inventiveness at a nondynamic level. The reiterativeness, diffuse structure, and trite content of these statements place them well within the intellectual capacity of any fluent but uninhibited individual, without any assistance from occult or other sources.

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'Entities' in the Linguistic Minefield

When channeled 'entities' speak in accents that are not native to their channelers, the authenticity of the manifestations can be checked by linguistic analysis. Analysis of the speech of several such entities shows that the accents are fake.

Sarah Grey Thomason

SKEPTICS HAVE repeatedly met with one major difficulty in their efforts to investigate channelers' claims about the "entities" for which they are the channels: As James Randi put it in introducing a session on channeling at the 1988 CSICOP conference in Chicago, "Channelers don't give you anything to bite on."[1]

When questioned about their "entities' " lives and times, channelers typically refuse to answer, commenting, for instance, "And so I say to you, rather than to attempt to understand who I am, allow whatever experience comes to you to be honored" (Emmanuel, an "entity" channeled by Pat Radagast). Emmanuel goes on to say that it doesn't really matter whether he is actually another being or simply another part, a deeper part, of Pat, because "the truth and the intuitive validity of what Emmanuel says is in the last analysis what really matters."

Like Emmanuel, most channelers and channelees decline to offer proof of claims that the "entities" are real people who once lived, or real anythings. If skeptical talk-show hosts insist on asking questions about an "entity's" identity, they are told that they must focus on the message and stop concentrating on the messenger. Nevertheless, channelers *do* say, quite frequently, that their "entities" are real, often with the added claim that the "entities" led real lives on earth in former eras. So they are making specific claims that should be tested.

But since they rarely or never mention historical facts that can be checked, the only data available is the linguistic evidence that channeled entities pro-

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vide every time they speak. Many of them speak in accents that are strikingly *un*like the natural dialects of their channelers. (None of the 11 "entities" that I've listened to speaks in a language other than English, perhaps because it might be hard to get your message across to English speakers if you deliver it in French or Latin or Atlantean.) If they do speak in strange accents, and especially if they give some facts about their previous lives on earth (if any), then a linguist can analyze their speech to see if the accents match the facts. If the analysis shows that the accents are implausible or impossible, then we have evidence that there is something fishy about the "entities." A clever channeler might find ways around such evidence, but in some cases the dodging would have to be so fancy that it would probably raise doubts even in the most gullible devotee.

Now, if a linguist can expose pseudo-dialects, you might think that the channeler would simply have the "entity" speak in the channeler's ordinary dialect as well as through the channeler's body.[2] Some of them do. Ken Carey, who claims to be a channel for Jesus Christ, uses his own American dialect when reporting the messages he has received from God, so he doesn't have to try to figure out what an Aramaic-accented English might sound like. Emmanuel also uses his (female) channeler's own dialect.

Even in these cases, though, "entities" often provide cause for doubt about their language. Take, for instance, St. Germain, who is channeled by a woman named Azana Ramanda, of California. Like most "entities" he delivers his typical message of peace and light in a very flowery and elevated style; this style seems appropriate enough for the message, but people whose natural dialect includes such a fancy style don't make the kinds of grammatical mistakes and stylistic gaffes that St. Germain makes. Here's an example from an April 1988 talk show in Perth, Australia. It is part of St. Germain's reply to the host, who has accused him of doing this for money: "That which is the tale has not been told. It is not for that which is the currency. . . . Anyone may perceive anything they so desire from anything." Moreover, although St. Germain has no dialect distortion, he speaks with a voice quality that is certainly *un*like the normal voice quality used in any language in the world. So it has to be fake (unless, of course, one wants to believe that the difficulties of his journey from the Other Side have somehow produced the strangled-sounding voice).

If channeled "entities" do speak in non-American dialects, there are two basic linguistic ways of testing the channelers' claims. First, if the "entity" provides historical or geographical information that places him or her in a particular time or a particular location, this information can be checked against the "entity's" speech to see if the sound patterns and other linguistic features match our expectations for that time and place. And, second, even if the "entity" does not provide such information, we can check the speech itself to see if it is inconsistent in ways that natural dialects are sure to be consistent. This second method can be combined with the first, of course; but applying the second method alone, in the absence of external information, is much more difficult, because success depends on whether or not we can

rule out *every* dialect of English and *every* foreign language as the source of the "entity's" speech patterns.

I'll start with the more difficult type and show first an inconclusive result and then a conclusive one. I've listened to two recordings of the "entity" Lazaris, whose channeler is Jach Pursel. Lazaris's accent sounds fake to me, but there are no obvious inconsistencies in his sound patterns. He gives no information that would point to a specific time or place for his earthly existence, at least not in the tapes I have heard; this means that, even if someone more knowledgeable about English dialects than I am established that Lazaris's accent does not represent any current or past dialect of English, it could still be the case that the sound patterns are characteristic of some long-extinct ancient language. Without inconsistencies, a linguist can't test this claim.

It's possible, of course, that there *are* inconsistencies in his speech, and that I simply failed to detect them. However, if a channeler who is a fake is sophisticated enough (or trained as an actor to produce stage dialects), she or he may be able to produce consistent sound patterns in a made-up accent— and such a channeler will be vulnerable to exposure through linguistic analysis.

But most channelers are not so sophisticated about language. A case in point is Julie Winter of New York, who describes her "entity" Mika as "an energy entity who works with me while I'm in trance." When Mika appears, he speaks in a high, unnatural tone, often a monotone; his vowel sounds are drawn-out and distorted, but not consistently distorted in the same way, as they would be if his non-American-sounding speech were genuine. His voice quality, like St. Germain's, is unlike any type of voice characteristic of any natural human language.

When I checked specific phonetic traits in which Mika's speech differs from ordinary American English (including his channeler's dialect)—for instance, his *r*'s, which were often trilled, and several vowel sounds—I found a lack of the systematicity that is characteristic of all of the world's languages and dialects. Many words were pronounced sometimes with an un-English sound and sometimes with an English sound.[3] Other words were always pronounced one way or the other, but instead of patterned substitutions Mika had random and inconsistent replacement of particular American English sounds with sounds that do not occur in American English. Moreover, the American-style pronunciations were especially frequent when Mika became excited (judging by his tempo, pitch, and loudness)—just the opposite of what one would expect if he were a non-native speaker of American English who was still practicing the use of sounds foreign to him.

All of this makes Mika highly implausible as a human linguistic animal. His unpatterned sound substitutions, strange voice quality, and tendency to sound more American under pressure are all easy to explain if the channeler is faking his speech, but they are hard to explain away under the supposition that he is a genuine "entity" independent of his channeler.

Even so, the linguist's job is much easier if an "entity" who is speaking something other than the channeler's dialect can be pinned down even to

an approximate time and place. Consider, for instance, Ramtha and Mafu. I haven't heard either of these "entities" speak, but I've heard about them, primarily in a tape of a Seattle talk-show on which members of Northwest Skeptics discussed channeling in February 1987. Ramtha, whose channeler is J. Z. Knight, is said to be a 35,000-year-old refugee from Atlantis. I don't know where Mafu, channeled by Penny Torres, is supposed to be from, but since he was asked if he could speak Latin and said yes, I infer that he too is supposed to be at least a couple of thousand years old. Both Ramtha and Mafu are said to speak in a vaguely British accent; Ramtha's accent struck one listener as British-Indian. Even without having heard either "entity," I can say that they are both in trouble as purported real "entities" if they speak in any kind of British accent.

If you had a time machine, you would probably only have to go a few hundred years back in English history before you would no longer perceive English speakers as having what we think of as a "British accent." Certainly you wouldn't need to go beyond, say, A.D. 1000, because the sounds of English have changed so much since then that the Old English of that period would sound to us more like German than like modern English.[4] For instance, most of the currently "silent" letters in written English reflect sounds that were actually pronounced in earlier spoken English; examples are the *gh* of words like *neighbor* (which sounded like the *ch* in the German name *Bach*) and the silent *e*'s in words like *time.* So a 35,000-year-old entity and a 2,000-year-old entity could not have had (in their original lives) genuine British accents that had any historical connection with modern British English, and any such accent would therefore have to have been entirely coincidental. But as far as linguists know, *no* two languages, among the five or six thousand now spoken, just happen to have the same sound system, so only a very determined believer could believe in this sort of coincidence.

I analyzed the tape-recorded speech of one entity who is claimed to have a specific location in time and space: Matthew, whose channel is Marjorie Turcott. On the tape a man named Don Hayes introduces Marjorie and Matthew, and he gives useful background information about two of Matthew's past lives. Matthew lived his main past-life as a poor, blind fiddle-player in Scotland in the early sixteenth century. He told Hayes and/or Marjorie that he was born in Aberdeen but moved as a small child to "a seaport town" called the Firth of Forth. Right away he has a problem: The Firth of Forth is a body of water, not a town. Hayes goes on to give, in Matthew's dialect and words, an account of how Matthew was killed at the age of 15. In this account, Matthew uses at least two words that no one else was using during his lifetime. One of them is *rapscallion,* which is first recorded almost 200 years later in a 1699 text. The other is *bully boy,* which existed in Matthew's day only in the meaning "good friend, fine fellow" (as it is used by Shakespeare in 1599); the meaning Matthew gives the word, "a tyrannical coward," doesn't appear until 1688.[5] Besides these words, some of Matthew's grammatical constructions are unknown, then and now, in the variety of Scots English spoken in Matthew's native region.

Mika's unpatterned sound substitutions, strange voice quality, and tendency to sound more American under pressure are easy to explain if the channeler is faking his speech.

Hayes then says that later, in the nineteenth century, Matthew "came again to a lady in Spain by the name of Margyurita." But his (i.e., Matthew's) pronunciation of the Spanish name Margarita is impossible; in Spanish, Margarita sounds rather similar to the English Margarita, and it has no *y* sound. Matthew must have been misled by the French *spelling* for this name, which is *Marguerite*—also pronounced without a *y* sound—and this is surely a very sophisticated error for a poor, blind sixteenth-century fiddle-player.

When Hayes finally turns the stage over to Marjorie Turcott, she goes into a trance and Matthew appears. His speech does have a few salient phonetic features that are characteristic of Scots English, for instance a frequent trilled *r*; but these features are not used as consistently as they would be by a real Scots speaker. Moreover, he has some speech sounds, notably an odd tapped *l* and several vowel sounds, that have never existed in Scots English. And, finally, he lacks a large number of the most characteristic Scots English phonetic traits, almost all of them certainly old enough to have been current during the sixteenth century. To give just one example, Scots English (unlike other dialects) has retained from Old English the sound spelled *ch* in Scots *loch* (or the German name *Bach*): This sound appears regularly in English words spelled with silent *gh,* and when Matthew says *neighbor* and *lighter* with the *gh* silent he betrays himself as a nonspeaker of Scots English of any century. He is therefore not believable as a Scots-dialect speaker.

But if he is not a present or former speaker of this dialect, what accounts for the presence in his speech of a few non-American phonetic features that do occur in that dialect? They can't be accidental, because he claims to be a Scot; and they can't be genuine, because there aren't enough of them. The most likely remaining possibility, it seems to me, is that his accent is faked by someone who doesn't know enough about Scots English to do it well. The only other possibility that I can imagine is that both his mistaken substitutions (such as *rosty bocket* for *rusty bucket*) and his missing Scots sounds are to be blamed on problems of transmission through the ether and through the centuries. I'd like to think that no one could believe that; but after listening to his audience's respectful reception of Matthew's pronouncements on the Bermuda Triangle, the civilization inside the hollow earth, UFOs, and psychic surgery, I cannot predict with confidence that his unique linguistic behavior will inspire skepticism in his followers.

Of course in publishing this article in the SKEPTICAL INQUIRER I am preaching mainly to the converted. But at least these analyses may show skeptics how to find ammunition when they get the opportunity to confront

strangely accented entities on talk shows: All you need is a linguist and a tape recording (in advance) of a linguistically inept "entity" speaking an odd dialect.

Notes

1. I am most grateful to Mark Plummer of CSICOP for his help in collecting tape recordings of channelers channeling their "entities," and to Dave Cassafer and Kurt Butler for sending me tapes of Ken Carey and Lazaris. Since I worked from tape recordings, I haven't seen the names of all the channelers and their "entities" in print, so I may have inadvertently misspelled some of them. An earlier version of this paper was presented at the 1988 CSICOP conference in Chicago on November 4, 1988. Space limitations made it necessary to omit detailed analyses of Mika's and Matthew's speech sounds in this version of the paper; any reader interested in seeing more of the analysis can write to me for a copy of the earlier draft (Department of Linguistics, University of Pittsburgh, Pittsburgh, PA 15260).

2. Or maybe not. If the funny accents help attract customers for the channelers' lucrative "workshops," the channelers needn't be too concerned about the possibility that professional linguists will confront them somewhere. In any case, most channelers, like most other people, are naive about language and probably don't realize how much information their "entities" provide when they speak in odd accents.

3. Of course natural speech, both native and non-native, includes a great deal of phonetic variation. Although it would take a much more detailed analysis to prove it, my argument here is that Mika's variation was unpatterned, whereas normal speech, even with all the phonetic variation, shows clear patterns.

4. Linguists trace the development of a language's sound system through old written records—including, in the case of English, records from various dialects—and through the comparative study of modern dialects and of closely related languages.

5. These dates come from the entries for these words in *The Oxford English Dictionary.* •

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Crystals

Crystals are indeed pretty rocks; but if you need to be healed, read and believe the disclaimers.

George M. Lawrence

YOU SHOULD have bought a crystal mine five years ago. Because of Shirley MacLaine and the media coverage of New Age crystal mania, demand is way up. Laurens Tartasky, owner of the Crystal Galleries in the Boulder (Colorado) Mall, says he can sell all the quartz crystals he can get, but he has to put them in the back room because the street people would come in and hang around all day absorbing crystal power. The Crystal Galleries is a high-quality shop with many fine mineral specimens. A visit is worthwhile, better than a trip to many museums, and one can appreciate the jewelry (gem) value of beautiful crystals. One Boulder collector has specimens appraised at nearly $200,000.

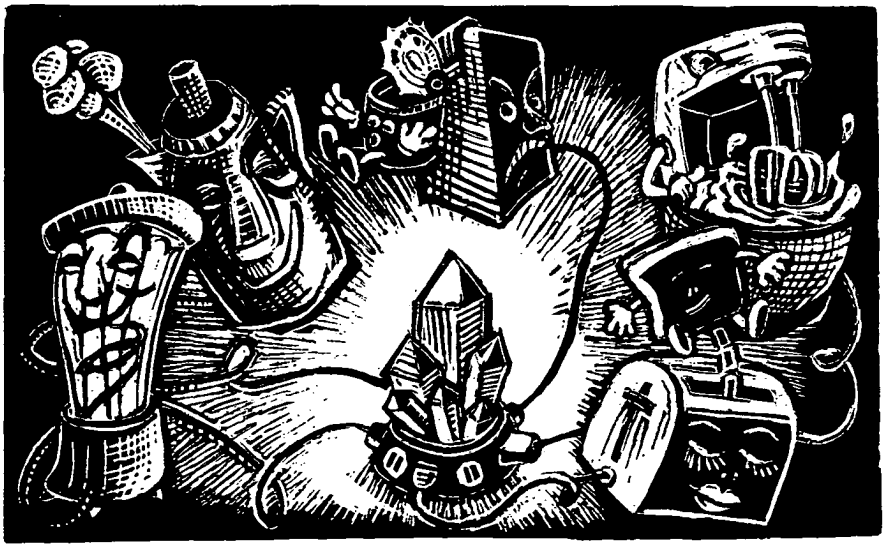

Illustration by Pat Linse.

Dr. Lawrence is an experimental physicist working in space science at the Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, and a fellow of the American Physical Society. He has used electronic crystals for more than 40 years.

Quartz is oxidized silicon, silicon dioxide. The chemical name is silica. When broken into small pieces by wind or waves, it forms sand. If pure sand is melted at a yellow-hot temperature, and cooled, it forms silica glass or fused quartz. If silicates are added, the mixture melts at a lower temperature (red hot) and forms ordinary glass. Silica dissolves somewhat in very hot high-pressure water. In the cooler portions of this hot water, crystals form in the shape of hexagonal needles, like six-sided Washington monuments. Synthetic quartz crystals of very high purity are produced this way for the electronics industry, with the crystals growing over a period of several days. Sometimes, in nature, impurities cause interesting colors in the crystals, forming the gems: amethyst, smoky quartz, rock crystal, rose quartz, agate, chalcedony, and jasper. Quartz is a somewhat inferior gem, softer than diamonds, rubies, emeralds, and zircons. Its ability to reflect and scatter light is no better than ordinary window glass. However, one can obtain samples that weigh tens of pounds (2,200 carats per pound). Diamonds might cost $5,000 per carat and quartz perhaps only $0.05 per carat. If a crystal contains impurities in interesting shapes (phantoms), the price is higher.

Technically, the value of quartz lies in two remarkable properties: It expands very little with increased temperature, and the crystals change shape when electric forces are applied. (These properties can be explained with the use of quantum mechanics.) One can heat quartz to red heat, throw it into water, and it doesn't break. Hence high-temperature laboratory glassware is made of fused quartz. If one makes electrical contact to opposite faces of a quartz crystal, say to two strips of silver paint, and hooks up a battery to the contacts, one gets a small but measurable change in the shape of the crystal. Conversely, if one squeezes the crystal in a vise, a voltage appears on the electrical contacts. Hooking the contacts to an appropriate transistorized electronic circuit produces a continuous vibration of the crystal. By the 1930s, the technology of this "piezoelectricity" was well understood. Now most of the millions of electronic crystals are made in the Orient. Small plates or tuning forks, precision cut from high-purity quartz crystals, vibrate at frequencies from a few thousand cycles per second (hertz) to 100 million cycles per second, depending on the size and shape. The frequencies of vibration are extremely accurate and stable, literally regulating the pace of modern life. If one were to run a clock from a typical television signal (crystal stabilized), it would be off by a second in 30 years or so. The crystal in your quartz wristwatch nominally vibrates 32,768 times a second ($32{,}768 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$). Each 32,768 vibrations, the watch ticks off a second. Quartz "rings" much better than the famous bell. Modern quantum electronics goes even further, storing holographic images in crystals.

A typical New Age mystic mentally attaches magic and emotion to crystals partly because he or she is vaguely aware of the near-perfect technical properties of quartz crystals. No matter if the technical facts are wrong (e.g., "Quartz crystals amplify the sound"), the claim is made that science supports the mystical claims. In fact, quartz crystals did not vibrate and resonate until

Typical New Age mystics mentally attach magic and emotions to crystals partly because they are vaguely aware of the near-perfect technical qualities of quartz crystals. They appropriate the words of science to manipulate their audiences.

twentieth-century science found the way to make them. Left to themselves, they still do not vibrate; they simply sit there like other pretty rocks. In science, one produces detailed descriptions of the behavior of the crystals that allows the construction of new technology. New Age mystics appropriate the words of science but go no further than the use of the words to manipulate the feelings and ideas of their audiences. The users of the crystals are asked to visualize various energies, auras, and colors. Because they naturally can visualize such things, they often assume the reality of these subjective experiences. Technical terms like *resonance, bonding, energy,* and *electromagnetic field* are used by the mystics, not as precise descriptions of the crystals, but as metaphors for human interactions and as buzz words connoting power. Indeed, the ancient phallic symbolism of the elongated quartz crystal, with its points, is not neglected.

The ideas of harmonics, vibration, and resonance show up in the most dangerous theme of New Age crystalogy: healing. A typical booklet, by "gem therapist" Gari Gold, promises "clearing away negative attitudes, centering personal energies, enhancing communications, promoting healing, opening the heart to love and courage, symplifying decision-making, balancing the spirit, focusing the mind, tapping into psychic powers, and using chakras and colors."[1] How can one lose?

This might all be fuzzy, fun, and harmless poetry, but some "healers" promise help for cancer, AIDS, and other dire diseases "if treated early enough." Published healing claims typically contain a disclaimer like this one by Alper: "There are no guarantees, no promises, only your own spiritual belief."[2] Thus having covered himself against a lawsuit, he lists 58 crystal rituals for the "healing" of everything from dysfunction of the adrenal glands to venereal disease.

At a talk to about 15 interested people at the Boulder Unity Church, Allen J. Harrison, D.C., explained "Harmonics, Healing, and Crystals." His brochure states: "Harmonics has uniquely blended ancient healing knowledge with present-day scientific understanding, to create a healing art that will shine into the twenty-first century." The ideas of "harmonics" were taught to him by a Dr. H. L. Rees ("an incredible man"), who lives in Kansas.

First Harrison introduced the group to crystals: "They can be charged with salt water or black light. . . . The copper color of some Brazilian crystals was put there by aliens. . . ." Then he "treated" about six of the attendees,

including me. The "diagnosis" was done by kinesiology. The patient holds out both arms and the therapist pushes down, looking for weakness. By holding a finger on various points of the body, the source of illness is "located." Once having located the illness, the therapist passes his hand over (three inches away) the afflicted part, holding a collection of crystals in the other hand. When the appropriate crystal "resonates" with the diseased organ, the "toxins" are carried out of the body, through the therapist's body, into the crystal, and thus into the universe.

"What is the resonant frequency of the liver?" I asked.

"I don't concern myself with those technical details," Harrison answered.

"How do you know which crystals to use?" someone else asked.

"I keep in touch with the universe," was the answer.

Harrison apparently believed almost any thought that came into his mind. His thinking was entirely metaphorical, without any reference to the nuts and bolts of objective reality. I think that two teenagers and I were the only ones in the audience who did not take everything at face value.

Back to the treatments. A healthy young woman, who said she competes in triathalons, was treated for "toxins." After a treatment on the massage table, she got up, saying, "What a trip. I'm dizzy." Afterward, she told me that hopefully she could give up the adrenal supplements that had been prescribed by another Boulder healer.

I was told that I had a severe hip problem. Scary, but not to worry; the treatment left no sign of the problem. I popped off the table wearing a big grin, leading one member of the audience to comment on how happy the treatment had made me. Harrison was not aware of the severe lumbar strain from which I was just recovering. The two M.D.'s I had visited earlier had spotted it immediately.

Afterward, I talked to a few members of the audience and told them that I didn't believe this "nonsense," and then I quietly left. The next morning I was angry at myself for not being more articulate. This is what I should have said to the group: "I will leave you tonight and you will not see me again. I do not accept what has been said here. There is no science here, only superstition. The use of quasi-scientific jargon is only done to emotionally bend your judgment. For *my* medical help and advice I will go to someone whose knowledge is based on double-blind controlled experiments for finding the truth, rather than to someone who believes any good story that pops into his head. 'Ancient healing' led to starvation, the plague, and early death. As for me and my house, we will seek objective reality. For the improvement of my soul, I will enjoy music, art, gems, poetry, and philosophy for their own beauty, not for the false hope of magic."

Notes

1. *Crystal Energy,* by Gari Gold (Chicago, Ill.: Contemporary Books, 1987).
2. In *The Crystal Sourcebook,* ed. by Milewski Harford (Sante Fe, N.M., and Sedona, Ariz., 1987), pp. 94ff. •

Consumer Culture and the New Age

The New Age movement and the consumer culture are nearly identical. Both promise complete and total transformation, but only if you buy the right product or learn the right technique.

Jay Rosen

BECAUSE IT has so many different dimensions to it, the New Age movement invites a number of different interpretations. I here discuss certain parallels between the New Age movement and what I will call the "consumer culture." I do not claim that this is the "right" way to look at the New Age, only that it is a useful way.

American business underwent a significant change around the turn of the century. Starting about 1870 or so, the problem of production started to share time with a new problem—consumption. The producers of goods began to realize that unless they also created a *market* for their goods the rapidly increasing rate of production would not bring bigger profits. To manufacture products was no longer enough, they had to manufacture consumers as well.

Business now saw that it had an interest in people both as laborers *and* as spenders of money. To influence their spending required an interest in their way of life; their assumptions and beliefs about the world were suddenly vital factors in the profitability of industry. For example, if families persisted in saving their money the consumer economy would never get off the ground. They had to be taught that spending was good, and that going into debt in order to spend more was not only possible for the average person but also desirable. This campaign evidently had some effect. Today the population of the United States saves less than that of any other industrialized nation.

Business also began to manufacture fears. People had to be taught, for example, that their bodies would betray them in social situations unless they used the proper mouthwash or soap. Industry therefore acquired an interest

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in anxiety. The more kinds of anxiety it could produce, the more cures it could peddle as products. In producing anxiety, the makers of goods had a lot of help, of course. Forces much more powerful than advertising were bearing down on individuals, uprooting traditional ways of life, and creating what Emile Durkheim called *anomie.* Sociologists have given awkward names to the largest of these forces—urbanization, industrialization, secularization, bureaucratization. To their disorienting effects we can add the influence of a consumer culture, which seeks to exploit and perpetuate anxiety for the purpose of selling goods.

Life-insurance advertising that plays upon a breadwinner's fear of early death is a blatant example of perpetuating an anxiety. A bit more subtle, perhaps, is the ubiquitous presence of perfectly shaped bodies in advertisements for everything from soft drinks to automobiles. The ideal body type presented in advertising is impossible for the majority of men and women to reach, no matter how much dieting or exercise they impose on themselves. Impossible images of thinness appear everywhere in America—not just in advertising but in films, fashion magazines, and television programming. This is why we are entitled to speak of a consumer *culture,* a set of interlocking social practices each of which contributes to the anxieties propelling consumption. My claim is that the New Age movement is extremely compatible with the consumer culture and helps to reinforce its effects.

One of the key words in New Age thought is *transformation.* The subtitle of Marilyn Ferguson's book *The Aquarian Conspiracy* is "Personal and Social Transformation in the 1980s." Perhaps a better subtitle would be "personal transformation *as* social transformation," for the underlying conceit in New Age thought is that you can change the world by changing yourself, that the material conditions of your life—including, of course, the laws of physics—can be altered by a new therapy, the right guru, or an enlightened outlook. One of the interesting things about this theme is its resemblance to the dominant message of product advertising, which is: "Buy this product and change your life." The promise of instant transformation is repeated with nauseating regularity in television ads, when for example, a woman with lifeless hair and a miserable lovelife becomes in the space of a few seconds a glamorous blonde with a rich and handsome man on her arm. As theories of how personal change occurs, the New Age movement and the consumer culture are nearly identical. Both promise complete and total transformation, but only if you buy the right product or learn the right technique.

Both also favor a particular personality type—the narcissist. Narcissism is frequently misunderstood as excessive egotism. In fact, what distinguishes the narcissists is not the strength of their egos, but their weak sense of self, their thin attachment to any tradition or community, their inability to form lasting relationships or to take comfort from the past. In a word, narcissists are uprooted persons. They are prone to exalted fantasies of fame and power because these help to firm up a chronically weak sense of self. The historian and social critic Christopher Lasch has argued in two important books (*The Culture of Narcissism* and *The Minimal Self*) that narcissism is not only

Narcissists are ideal New Age converts, because they are preoccupied with finding their true selves and are likely to be seduced by the grandiose fantasies so common in New Age thought.

a clinical but a *cultural* condition in the United States. What he means by this is that the narcissistic personality is now encouraged by some of the strongest forces in American life.

These include: the uprooting power of modern capitalism, which continually weakens and destroys inherited ways of life; the devaluation of the past in a culture where mobility and change are often valued for their own sakes; the premium placed on manipulative charm in business, politics, and social life; the cult of celebrity encouraged by the mass media; and, of course, the consumer culture, with its seductive images of abundance and instant pleasure. Taken together, these forces constitute a kind of culturewide attack on a secure sense of self, making narcissists, with their weak egos and overheated fantasies, almost too familiar to notice on the American scene.

It should be obvious that narcissists are natural targets of the consumer culture, in that their tenuous sense of self is in need of shoring up with products and the glamorous aura that surrounds them. Narcissists are also the ideal New Age converts, first because they are preoccupied with finding a "true"—that is, stable—self, and second because they are likely to be seduced by the grandiose fantasies so common in New Age thought. Many of the most predictable New Age clichés—you have unlimited potential, you are unique, you have untapped creative powers—confirm the narcissist's deepest hope: that he or she is the special one in the crowd, the deserving center of attention, the star. Despite its strong rhetoric of equality, a lot of the New Age movement is structured like a pyramid, with a few people at the top getting rich and famous and a broad base of believers (and spenders) below.

The promise to empower that comes from the guru, the channeler, the seminar leader, the inspirational author, the person running the scam, is contradicted by the obvious fact that the one promising others power is always the center of attention. Whatever inspiration Shirley MacLaine may offer her followers, the one thing she cannot give them is her fame, the lack of which is one of the reasons her fans need so much inspiration. Only she really gets to "have it all," only she gets the electric jolt of self-affirmation that accompanies a best-selling book, a sold-out lecture, a thriving cult centered around herself.

A similar kind of hierarchy can be seen in the consumer culture. Everyone is "special" in the cloying language of advertising. Everyone is encouraged to "have it all" and enjoy the glamorous lifestyle that cars, clothes, jewelry, and fine furnishings make possible. But the people who actually inhabit this

lifestyle are a select few—movie stars, models, rock singers, the people who people the pages of *People* magazine. Encouraged to be glamorous in a hundred different ways, the consumer is simultaneously fed news of "the stars"—those who actually live the life of glamour, which is a life made possible by the pyramid of attention the stars command. The inescapable knowledge that they are not among the chosen only heightens the narcissists' fantasies of fame and power, making them more and more dissatisfied with the more modest rewards that work, culture, politics, and family can bring. Through the mass media, the consumer culture thus devalues every other form of satisfaction but the most unattainable: the life of the stars.

A similar dynamic is at work in the New Age movement. Typical New Age converts are often painfully aware that their own sense of self is not nearly as strong as a guru's, and though they might like to lead others to enlightenment (and enjoy the resulting rewards) they usually cannot muster the ego strength to do so. This is one reason so many people in the New Age drift from fad to fad, exchanging religions with the seasons. None of the fads can actually deliver on the promise to overturn the pyramid and place the believer on top. Like any other expert, the guru-entrepreneur has an interest in keeping his followers dependent on his advice. One way to do this is to dispense advice that is superficially "empowering" but crippling in the long run. For example, in Werner Erhard's *est* training, the first thing new recruits learned was that all their problems were of their own doing. One can imagine this being a revelation to some, because it implies that all problems, being self-caused, can be self-solved. But eventually the *est* message becomes disabling, when societal problems—the lack of meaningful work, for example— are blamed instead on the self, which can hardly be responsible for the degradation of labor in a highly technological society.

To conclude: The parallels between the New Age and the consumer culture show how rooted both phenomena are in the general rootlessness of American life. As Christopher Lasch once put it, "Uprootedness uproots everything except the need for roots." The New Age addresses this very real and very human need. That is why it cannot be laughed away or dismissed as mere superstition. The problems it claims to solve—the lack of meaning, the lack of power, the weak sense of personal identity—are, in a very real sense, the problems of our century, and particularly of our culture. •

This article is based on a longer essay entitled "Optimism and Dread: TV and the New Age" in Not Necessarily the New Age, *ed. by Robert Basil (Buffalo, N.Y.: Prometheus Books, 1988).—ED.*

The Shirley MacLaine Phenomenon

A look at the influence, alleged beliefs, and outrageous statements of one of the leading gurus of the New Age movement.

Henry Gordon

MY RECENT book, *Channeling into the New Age: The "Teachings" of Shirley MacLaine and Other Such Gurus,* includes, among other things, a pretty harsh criticism of MacLaine. So I will not at this time be too uncomplimentary.

MacLaine obviously seems to believe what she is preaching (or "sharing," as she prefers to call it). Her influence on the public can be measured by the attendance at her seminars, the ratings of her television movie, and the phenomenal sale of her books.

Perhaps even more noteworthy is the fact that MacLaine almost single-handedly created the craze that has enabled countless "channelers" to separate the public from millions of dollars.

These so-called conduits to the "other side" are proliferating. They are promoted in newspapers and magazines and on radio and television talk-shows; millions listen to them spout their banalities and thousands take them seriously.

In her early books, MacLaine described her adventures in far-off places. But with *Out on a Limb,* her first book to outline her beliefs and experiences with the occult, she hit the jackpot. *Out on a Limb* was soon followed by *Dancing in the Light* and *It's All in the Playing.* The paperback editions of these three books have sold in the millions. *It's All in the Playing* is a recounting of the film she made that was a recounting of the first book. I assume we may look forward to a new film portraying the last book, which described the film that portrayed the first book. And so on.

One constant theme runs through all of these books: a stream of seemingly paranormal anecdotes that will strain your credulity. A good example, in *Dancing in the Light,* is MacLaine's visit to her acupuncturist, Chris Griscom, in Santa Fe, New Mexico. Griscom is not your everyday acupuncturist. When she punctures you, it's not simply to remove pain or cure your hiccups. It's to put you into fast reverse and spin you back a few lives. According

Henry Gordon is a magician, broadcaster, journalist, and author who lectures at conventions and at universities throughout Canada and the United States.

to MacLaine, the needles "stimulate memory patterns locked in the cellular memory of the physical body." She doesn't explain how the cells are preserved for another lifetime after the original body has decayed. For MacLaine, Griscom's method is much more efficient than the archaic one of hypnotic regression. This may start a whole new trend in needle-noodling.

But that isn't all. MacLaine tells us of Griscom's remarkable powers of pyschokinesis. She recalls how dozens of flies were buzzing around the room while she was being punctured. Chris merely stretched out her arms and concentrated. The insects immediately vacated the room through an open door.

This is only one of many such anecdotes, but it will prepare you for what to expect should you decide to plow through one of MacLaine's books.

Here is a small sampling of her "teachings":

> Doctors . . . are so confused with this disease [AIDS] they don't know what to do. Maybe this is the purposeful good of the disease. By the way . . . there's a purposeful good to everything. . . . (From "City Lights Show," City TV, Toronto, September 21, 1987)

This was MacLaine's response to a question about AIDS. Is she trying to say the AIDS epidemic can be beneficial in that it confuses the medical profession? I'd like to see her try to convince an AIDS sufferer that there's a "purposeful good" in the affliction.

> I really think we are creating our own reality. I think I'm creating you right here. Therefore I created the medium, therefore I created the entity, because I'm creating everything. (From a recorded interview with Henry Gordon, September 16, 1985)

When I questioned MacLaine about the authenticity of her medium (channeler) Kevin Ryerson, she suddenly became defensive and launched into the "creating our own reality" maneuver, which gets her off the hook.

When I countered with a weak "But Ryerson is a reality to me and to others," she answered: "In my dream he is. But I don't know if he's a reality to you."

> I'm more interested in getting the truth, rather than condemning the people who are lying [the so-called psychics]. (From the "Andy Barrie Show," CFRB Radio, Toronto, September 15, 1987)

MacLaine maintains that we should seek truths by overlooking untruths. The problem is that scoundrels often obscure the truth, and many people accept their lies.

Following are a few "scientific" quotations that should give us pause for thought:

> Nothing ever dies—science tells us that—nothing ever dies, it just changes form. (From the Phil Donahue show, September 9, 1985)

One of the principles of physics tells us that the matter and energy in the universe remain constant, although they can change in form. But science does not tell us that nothing ever dies.

> If one says audibly, "I am God," the sound vibrations literally align the energies of the body to a higher attunement. (From *Dancing in the Light,* p. 119)

It does sound scientific, doesn't it?

The following "teachings" defy comment:

> In déjà vu you are getting an overlap of a past-life experience, or you could be getting an overlap of a future-life experience. . . . That's what Einstein said." (From the Sally Jessy Raphael show, September 28, 1987)

> When we had déjà vu experiences, perhaps, we were not actually seeing something in the past/future-life sense, but inadvertently shifting to a different aspect of the whole. . . . (From *All in the Playing,* p. 189)

> When three or more people are gathered with the same intentionality in a room, the energy units are squared. (From the "Andy Barrie Show," September 15, 1987)

> The vibrational oscillation of nature is quickening. (From a quotation of MacLaine's in the *Los Angeles Times,* July 20, 1987)

I am often asked what harm there is in the Shirley MacLaine phenomenon. Can her flaky philosophies really influence people? MacLaine's constant repetition of the "I am God" slogan helps sell the idea that the individual can do no wrong. To some people it can condone any sort of self-centered or self-fulfilling action. And her endorsement of various types of alternative medical treatments can prove dangerous. MacLaine exerts a greater influence on the gullible than does the average New Age promoter because of her public prominence.

When MacLaine was a guest on the "Larry King Live" television show on CNN on September 17, 1987, one listener called in to say that his family had been completely "blown apart" by the kind of thinking she espouses. "My wife," he said, "in a time of depression went to a psychic healer and was told that in a past life I had murdered her and run off with her teenage daughter. I've not seen her in two years. I think she was looking for a crutch to avoid dealing with the realities of life—thinking things would be better the next time around. I think there's a certain group of people that can be damaged irreparably by this type of thought."

In my opinion, the people who follow Shirley MacLaine, collect her books, and attend her seminars are "looking for a crutch to avoid dealing with the realities of life." •

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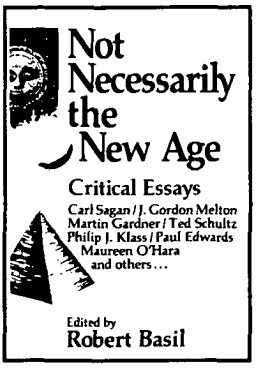
Book Reviews

And Now . . . Here's the New Age

Not Necessarily the New Age. Edited by Robert Basil. Prometheus Books, Buffalo, N.Y., 1988. 395 pp. Cloth, $19.95.

Channeling into the New Age. By Henry Gordon, with a Foreword by Isaac Asimov. Prometheus Books, Buffalo, N.Y., 1988. 198 pp. Cloth $18.95; paper, $11.95.

Wendy Grossman



ROBERT BASIL, the editor of *Not Necessarily the* New Age, felt frustrated by the lack of a "balanced and multifaceted examination" of the New Age movement and collected these essays to provide one. In *Channeling into the New Age,* Henry Gordon has mounted a detailed examination of Shirley MacLaine, the New Age's kingmaker. Loosely speaking, of the two, Basil's book is far more detailed, and much of it more academic. Both books begin with a historical overview. Gordon's, although a bit thin, is more practically oriented and much easier going, particularly his (albeit limited) account of the history of New Age beliefs.

In Basil's tour, J. Gordon Melton, director of the Institute for the Study of Religion, traces the beginnings of the New Age to Theosophy, Eastern mysticism. Emanuel Swedenborg, and a synthesized vision of the limitations of materialism and the possibilities of personal transformation. Author James Webb then gives a detailed examination of the sixties' contribution to the foundations of irrationalism in America. Webb considers crucial the fusion of three elements: anxiety, a broad base of Bohemianism, and successful political organization. He also makes the point that the New Age is better defined in terms of goals and ideals than in terms of a set of beliefs.

Basil's book continues with critical examinations of specific ideas. These show how derivative the New Age really is, and how it has claimed credit for ideas already

Wendy Grossman is founder of the British & Irish Skeptic *newsletter.*

discredited, some of them centuries ago. Philosopher Paul Edwards tackles the philosophical, moral, and practical problems of belief in reincarnation and karma. He also discusses the recent development of hypnotic *pro*gression, by which hypnotists help their subjects to explore future lives. Edwards quotes the progressionist who lamented that "we have been programmed to believe that the future hasn't occurred yet." Melvin Harris then examines hypnotic *re*gression in his report on research into the Bloxham tapes. This essay, reprinted from his *Investigating the Unexplained,* shows clearly how forgotten conversations, novels one has read, and so on, can contribute to hypnosis-induced fantasies.

Maureen O'Hara, a psychotherapist and professor of women's studies, describes humanistic psychology's contribution to the New Age and pleads for a "recommitment, in humanistic psychology, to an ideal of disciplined scholarship." Psychologist Susan Blackmore examines out-of-body experiences and proposes physiological, scientifically testable explanations for them. To say these experiences are merely imagination or hallucination, she argues, does no service to the cause of understanding them. Martin Gardner's essay on Shirley MacLaine (adapted from two chapters in his recent book, *The New Age: Notes of a Fringe-Watcher*) examines the logical consequences of her ideas and solipsism, and recommends Chesterton-style radical therapy to convince her that being God is "too big a strain." Philip J. Klass takes on UFO-abductions (excerpted from his *UFO-Abductions: A Dangerous Game*), and recounts the careers of Budd Hopkins and Whitley Strieber (and their subsequent disagreements). In a lengthy interview with Brad Steiger, a prolific contributor to the New Age literature, Basil is told that Steiger became interested in occult beliefs after a near-death experience at the age of 11. Finally, music critic Leslie Berman critiques the formless white sound that is called New Age music. (I, a musician, think some of it can be compared to Chinese water torture.)

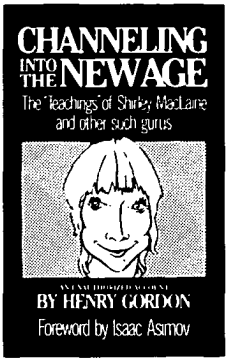
The next section of this book, titled "The Politics," addresses wider issues. Jay Rosen, who teaches journalism at New York University, compares television's continual imitation of past successes with the New Age's recycling of comforting beliefs. *Whole Life* editor Marc Medoff's chapter on "New Age-Gate," the most passionate and angry piece in the book, describes the damage done both to individuals and to the community as a whole by the charlatans who promoted the Airplane Game. This was an illegal pyramid scheme that reached great heights of popularity in 1987. Carl Raschke, a professor of religious studies, examines the implications of the application of New Age ideas to business practice and concludes, "The Japanese are probably having a good giggle."

In his striking personal memoir, editor and critic Ted Schultz recounts his early struggles to understand why his Lutheran religion had it "righter" than any other. This led to skepticism. His later desire for change led him through New Age practices to the study of science and technology, as he came to understand that change in the world has been most effectively brought about by scientists and engineers.

The final section of the book is a guide to skepticism and its practice: a reprint of Carl Sagan's "The Burden of Skepticism," his keynote address at the 1987 CSICOP conference; Alan M. MacRobert, an editor at *Sky and Telescope,* on how to recognize pseudoscience; and physicist-biologist Al Seckel on how to evaluate and protect oneself from pseudoscientific claims.

Henry Gordon's *Channeling into the New Age* is divided into two main sections. In the first he examines the New Age generally, then trance channeling, and finally Shirley MacLaine's career. The second section analyzes specific quotations from MacLaine's published or broadcast utterances. He includes such gems as:

"Consciousness changes everything. If you are angry, your car won't start"; and "All science is looking for the explanation of God." Gordon's comments range from debunking explanations to sarcasm ("Kick the tires, Shirl!").



Gordon's discussion of MacLaine's specific uses and abuses of science parallels the wider and deeper examination of the same topic in Basil's book. Science is used if it bolsters a belief and discarded as "materialistic" if it contradicts it. Often science is misunderstood or distorted. Here is MacLaine explaining about the use of crystals: "Crystals are amplifying minerals. You have a crystal in a radio—it amplifies the sound waves. You have a crystal in a television set—it amplifies the light waves. When you hold crystals, they amplify the thought waves." Gordon deals with this one gently (for him), but thoroughly.

Gordon and most of the contributors to Basil's book agree in tracing the contemporary origins of the New Age to the sixties, the human-potential movement, and what is called the "me generation." Both books cite Marilyn Ferguson's 1980 *Aquarian Conspiracy.* Gordon thinks the New Age is different from earlier waves of belief in the paranormal because of the heavy backing of the publishing industry coupled with the support of popular stars. Most also agree on the contradiction between New Agers' professed "self-dependence" and their actual dependence on their various gurus. James Webb quotes John Wilcock (writing about California in 1966): "There's always some screwball out here who's got some new cult or ism working and a band of happily unrealistic acolytes around him who are now convinced that they've discovered the True Path to everlasting health, wealth, and satisfactory orgasm."

There are more common themes. The slogan "I am God" makes the speaker wholly responsible and all personal versions of truth equal. The belief that there is no right or wrong makes the believer infallible and any action acceptable. Medoff says that many victims of the Airplane Game still describe it as a "growth experience" and cannot admit that they got taken. This is the problem: How can you learn from mistakes if you're unable to define them as mistakes? Rosen calls this a longing for everything to come out all right, as in a soap opera. Another common theme is that of personal transformation. While Gordon calls this the "fast fix," Webb sees it in terms of freedom—not, he explains, political freedom, but "freedom from being human." Schultz contrasts his dedication to scientific proof with two vital New Age tenets: (1) believe what "feels right," and (2) if you believe in something hard enough, it will come true. O'Hara refers to this when she talks about the application of "critical mass" to beliefs and changing "consensus reality." Gordon and Medoff explain further that the belief that truth either doesn't matter or doesn't exist makes it impossible to identify useful ideas. Schultz and O'Hara agree that the New Age has added to our understanding—for example, that one's emotional state may affect one's immune system. But what makes ideas useful is their standing up to testing and practical application, not that they "feel right." Schultz has managed to fuse a scientific career with a personal ability to learn from a metaphorical understanding of New Age beliefs and to enjoy some New Age practices.

It is a bit surprising that Basil's book does not include a hard-edged analysis of the financial side of New Age industries, à la the *Wall Street Journal,* and that

there is so little discussion of alternative medicine. And, because the book focuses so much on the mainstream, there is no mention of the radical feminist community's adoption of witchcraft. Some of these neglects are covered by Gordon's book. One might say that Basil's book gives a clearer picture of how we got here, and Gordon gives a better overview of exactly where "here" is. A skeptic will derive instruction and entertainment from both books. •

Time-Life's Descent into the New Age

Cosmic Connections. By the Editors of Time-Life Books. Time-Life Books, Alexandria, Va., 1988. 160 pp. $12.99.

Mind Over Matter. By the Editors of Time-Life Books. Time-Life Books, Alexandria, Va., 1988. 144 pp. $12.99.

Visions and Prophecies. By the Editors of Time-Life Books. Time-Life Books, Alexandria, Va., 1988. 160 pp. $12.99.

Psychic Voyages. By the Editors of Time-Life Books. Time-Life Books, Alexandria, Va., 1988. 144 pp. $12.99.

Kendrick Frazier

TIME-LIFE BOOKS' "Mysteries of the Unknown" series was introduced just as interest peaked in the so-called New Age phenomenon. The series has been something of a phenomenon itself. It already is the most successful series in the history of Time-Life Books. According to *Publishers Weekly,* the first book in the series, *Mystic Places,* broke all sales records for Time-Life's continuity programs.

Why the great success? Well, first is Time-Life's experience and marketing expertise. It is skilled in first learning what the public wants, and then giving it to them. The direct-mail promotion campaign for the series was flashy, highly sensationalized, and obviously effective. That it was also full of distortions and stooped to many supermarket tabloid tricks undoubtedly was only a marketing advantage. (See our news reports on the series and its promotion campaign, *SI,* Spring 1987, Summer 1987.) The approach taken in these slick direct-mail brochures continues to offend many scientifically concerned people. "Every canard, rumor, or piece of hogwash of the past hundred years or more has been resurrected for this abomination," a Chicago lawyer wrote us in January 1989. "It is being passed off on a naive humanity

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under the prestigious name of Time-Life. . . . They appear to be willing to play upon all the ignorance and primitive emotions of our largely uneducated society."

A television advertising blitz came in 1988, including a commercial that has won an award for direct-mail promotion. But, as *Publishers Weekly* quotes Time-Life's product manager, Tom Corry, "Timing is everything." And, as *PW* correctly observes, with the burgeoning interest in the New Age the timing couldn't be more perfect. The publisher's bottom-liners should be very pleased.

But what of the editors? What about the books themselves? *SI* has already reviewed two, the aforementioned *Mystic Places* (Spring 1988) and *The UFO Phenomenon* (Summer 1988). By now about a dozen titles have been published, with more of the promised total of 20 to arrive soon. With this large a sample available (of which the four books considered here are representative), now seems a good time for an assessment of the series over all.

But first, a confession of possible bias. I myself am the author of a Time-Life book, *Solar System* (1985), the lead book in the "Planet Earth" series, and have written a chapter for another, *Lifesearch,* to be published soon as part of the new "Voyage Through the Universe" series. These are, in my perhaps prejudiced view, quality science books, and Time-Life, I can honestly say, does an excellent job to ensure that its science books are scientifically respectable.

So it pains me to report that the same cannot be said for the "Mysteries of the Unknown" series. In fact, in my view, Time-Life blew it. It had an extraordinary chance to help improve the abysmally low level of scientific literacy in this country. This attractively produced and popular series could have been a boon to public education. It could have helped a confused public sort through the bewildering array of paranormal claims that everywhere assault the mind and senses and apply scientific principles and reasoning to these controversial and emotional topics.

In our aforementioned news report on this series, Lys Ann Shore quoted Series Director Russell B. Adams, Jr., as saying the books "are intended for entertainment, presenting vivid stories about interesting incidents." He said he hopes the result "won't insult the believers with skepticism and won't insult the skeptics with its credulity." They achieved the entertainment function; the books are filled with stories. As for the concerns he mentioned, it appears more effort was devoted to pleasing believers than mollifying scientifically oriented readers.

I have to admit I was hoping that Time-Life would somehow manage to find and take a higher editorial road. I thought it might rise above mere entertainment and exploitation of the public's fascination with the paranormal and use its enormous resources and production skills to break new ground and find ways to both entertain *and* enlighten and educate. It didn't.

Oh, the series, as one expects, is handsomely packaged and produced. The ancient color illustrations in *Cosmic Connections,* which is about astrology, and in *Visions and Prophecies* are particularly striking, and many of the other volumes also are well illustrated. But I found the commissioned semi-ethereal paintings, such as those illustrating "out-of-body experiences" in *Psychic Voyages* and "visualization" in *Mind Over Matter,* nourish neither eye nor soul.

And the editors and authors have done their research. Unlike those of most New Age books, the editors obviously did make an effort to locate and read the main scientific and skeptical arguments against the reality of the paranormal phenomena discussed. For example, *Cosmic Connections* carries in its bibliography virtually every analysis of astrology ever published in the pages of the SKEPTICAL INQUIRER, and many others as well.

Despite these efforts, the end result, from the viewpoint of the scientifically concerned citizen, is a disappointment. The series, far from being a potential solution to the problem of uncritical public acceptance of the paranormal, is more likely another prominent contributor to it. The books exhibit a determined reluctance to openly criticize what deserves criticism and an equal determination to provide a sympathetic hearing to the defenders of paranormal explanations. Skeptical examinations and scientific explanations are routinely diluted by wishy-washy weasel wording or by paranormalists' counterarguments.

A section on Uri Geller in *Mind Over Matter* is typical. It reasonably describes some of Geller's exploits and several testimonials he garnered from some physicists in the mid-1970s and follows this with a section on James Randi's efforts to expose Geller, as recounted in Randi's *The Truth About Uri Geller.* There are even three photos of Randi showing one way (there are many) to do the key-bending trick. Here was a chance to declare straightforwardly (and accurately) that despite Geller's continuing claims he has been shown clearly to be a trickster. But the pro-Geller view gets the last word, first with a section about Geller's claims to provide mineral-dowsing services and supposedly to do occasional "secret psi work," leaving the clear implication that Geller's "peace thoughts" may have led to the idea of a Soviet-U.S. disarmament treaty at least being taken seriously. It then makes another bow to Geller's critics, followed by this concluding apologia:

> And yet, as his supporters never tire of pointing out, Geller has never been indisputably proven a fraud. True enough, he may have cheated in inducing some of his psi effects, he may be distressingly temperamental and egotistical in his dealings with investigators, he may shun all observers whom he knows to be hostile to his work and perform poorly or not at all in the company of people he "senses" are antagonistic to his claims. But such behavior, Geller's supporters say, does not in itself rule out the possibility that Geller is also capable, under favorable circumstances, of producing genuine ESP and PK effects. It only makes full and final evaluation more difficult—which may, indeed be exactly what Uri Geller wants.

Note the studied appearance of neutrality, finally resulting in just the view Gellerites continually promote. The evidence is clear that Geller is indisputedly a trickster, and the publishers should have had the will and courage to say so. Instead they adopt an impartial tone that leads right to the pro-Geller conclusion.

The final sentence of the passage is also revealing. It leaves open the question of the reality of the claimed phenomena. I suggest that "what Uri Geller wants" is also what the publisher wants, whether consciously or subconsciously: to leave the "mystery" apparently open, unsolved (even when in fact it has been settled). It strings the reader along. It's good for business.

This is the "We'll leave it to your judgment" ploy. Sounds fine. Very democratic. Very populist. One difficulty is obvious: Scientific judgments aren't made by popular vote. But, more crucial, people can come to a proper conclusion only if they've been given all the facts, and the book doesn't begin to relate all the evidence damaging to Geller's case. The same thing happens time and again throughout the series.

The same book's section on "psychic photography"—which I didn't think anyone had taken seriously in a decade—mentions possible normal explanations, involving trickery, then discounts them: "One notion is that thoughtographers use psychic force to manipulate the chemical particles on the film; another hypothesis is that they create invisible images that the camera somehow captures on film."

The section on poltergeists gives proponents fairly free reign. "I have no doubt,"

it quotes an investigator concerning one incident, "that it was a genuine case." There's a section about the Columbus, Ohio, poltergeist case where teenager Tina Resch was convincingly shown to be performing the shenanigans herself. The section relates that evidence, but once again follows it with a negating statement: "Yet not everybody shared that view. Many of the supposedly skeptical reporters remained sure that other seemingly supernatural events were genuine." And it concludes with the clear implication that something paranormal was in fact going on. Tina asks the poltergeist to stop. "Eventually it did, as all alleged poltergeist disturbances do. . . . For the troubled human agents who are its focus, Alan Owen has suggested, the poltergeist is like a fever that runs its course." Come on!

The chapter on twentieth-century astrology in *Cosmic Connections* does briefly report results of recent scientific tests of astrological claims (such as the 338 correct predictions out of 3,011 summarized by Roger Culver and Philip Ianna in their 1984 survey), but consistently points out when mentioning such scientific verdicts that astrologers offer other, more favorable interpretations. There's a brief and unsatisfactory summary of the Mars Effect controversy. Surprisingly, the only comment selected from Geoffrey Dean's major two-part critical examination of astrology published in the SKEPTICAL INQUIRER (Winter 1986-87 and Spring 1987) is one that needs far more context: "Clearly, when used in this way [in counseling], astrology can be valuable without needing to be true." This final chapter ends rather peculiarly. There's a section of text allowing astrologers to claim that their concern for "the seamless wholeness" of the universe is somehow in the same high scientific tradition as physicist Stephen Hawking's call for "a complete unified theory that will describe everything in the universe." And then there's a litany of supposed predictions of sea disasters by a British astrologer, which the writer says "can send a vaguely familiar shiver running up the spine."

In other places, the books do rally to responsibility and reason. A section on Jeane Dixon in *Visions and Prophecies* surprisingly comes down hard on her, providing both facts to counter claims of some of her most dramatic supposed "predictions" and a good critical analysis of how it is psychics always can point to "successful" predictions: chance, general statements, the public's selective memory, the shotgun effect, and so on. Examples are given of failed predictions, and of correct predictions using normal, nonpsychic methods.

Some sections just present the lore of the claims without commenting or analyzing much either way, for example, illustrated essays on palmistry and graphology in *Visions and Prophecies* and on casting birth charts and plotting planetary aspects in *Cosmic Connections*. Nothing wrong with that, although the casual reader will undoubtedly be left with the impression that all this written and visual attention must mean there's something to it.

All in all, "The Mysteries of the Unknown" series, while not as sensationalized as its advertising campaign, is no great friend of science, science education, or critical thinking. The general consultant for the series is a sociologist who describes himself here as a "constructive skeptic" but who has frequently lashed out at what he likes to call "the orthodox scientific establishment." Each book has several specific consultants, and those listed are typically semi-paranormalists or people who have written about the subjects in highly sympathetic ways. There are few, if any, scientists or scholars known for hard-nosed scrutiny. Time-Life Books turned its back on the great concern educators and scientists have about scientific literacy, critical thinking, and rationality, and went for pure entertainment and fantasy. The series has no soul and no intellectual or scientific backbone. What a pity that is! •

A Religion Writer's View of the New Age

Understanding the New Age. By Russell Chandler. Word Publishing, Dallas, Texas. 360 pp. Cloth, $19.95.

Richard J. Brenneman

AS RELIGION writer for the *Los Angeles Times,* Russell Chandler has been privileged to observe the New Age from the heart of the movement; for the New Age is a phenomenon with deep roots in California, the lineal descendant of Esalen, the Haight-Ashbury, the golden-domed Paramhansa Yogananda ashram in Los Angeles, and Hollywood, which has made a substantial contribution to the advancement of New Age claims. Chandler's position is also significant because the *Los Angeles Times* boasts a daily circulation of more than one million and is read by many of the nation's business and political leaders. He is an award-winning religious writer. Word Publishing, which brings us *Understanding the New Age,* is a Christian publishing house. Chandler himself holds a master of divinity from Princeton Theological Seminary and once served as pastor of a California congregation.

Chandler is a good journalist, and he uses his reportorial skills to provide a broad overview of that loose amalgam of old and new, Eastern and Western, sincere and deceptive, called the New Age. He knows the movement, and his most sobering passage is a succinct recitation of its reach, as shown by public opinion polls:

> Nearly half of American adults (42%) now believe they have been in contact with someone who has died—up from 27% in a previous survey eleven years earlier. . . . 57% of all adult Americans, or some 70 million [report having experienced paranormal phenomena]. . . . Roughly 30 million Americans—about one in four [adults]—now believe in reincarnation. . . . Between 1978 and 1984 belief in astrology had risen from 40% to 59% among schoolchildren. . . . 67% of American adults read astrology reports, while 36% believe the reports are scientific. (pp. 20-21)

In this context comes another sobering fact: in 1978, nine million Americans were involved in "spiritual healing."

Understanding the New Age first defines the movement, then introduces its central personages and ideas, its commercial aspects, and its more dangerous implications for the physical and psychological health of believers. Chandler quotes New Age proponents and cites the criticisms of noted skeptics. (SKEPTICAL INQUIRER readers will encounter many familiar names, including Carl Sagan, James Randi, Martin Gardner, Carl A. Raschke, Béla Scheiber, Al Seckel, and Karl Sabbagh.) The B. Dalton stores give the book prominent display space in their New Age sections.

Chandler is frankly and evangelically Christian (although he criticizes the conspiracy-minded fringes of Christianity), and he informs his readers that he is writing "just a short walk" from the mountain retreat where the Reverend Billy Graham made his decision "to take the Bible by faith and preach it without reservation." Chandler has adopted that position as his own, and he finds this book on

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the New Age a bully pulpit. While he largely reserves his open proselytizing for the final chapters, throughout the body of the text his use of critics is selective, and the mainstream Christians he cites challenge New Age claims from their belief structure. Chandler is not entirely dismissive of the paranormal; he seems to think that some of the phenomena may be demonic.

While the book is well footnoted and contains a helpful glossary, it lacks what publishers all too frequently abandon these days, an index—without which, a book loses much of its value as a research tool. But until a more objective, thoughtfully indexed overview is written for the general public, *Understanding the New Age* will remain the most accessible introduction, with footnotes leading to other sources—including the SKEPTICAL INQUIRER. •

Crystal Power and the New Age

The Complete Crystal Guidebook. By Uma Silbey. U-Read Publications, San Francisco, Calif., 1986. 227 pp. Paper, $9.95.

Healing and Quartz Crystals: A Journey with Our Souls, Vol. 1 of *Patterns of the Whole.* By John D. Rea. Two Trees Publishing, Boulder, Colo., 1986. 347 pp. Paper, $12.95.

Lightseeds: A Compendium of Ancient and Contemporary Crystal Knowledge. By Wabun Wind and Anderson Reed. Prentice Hall, New York, 1988. 191 pp. Paper, $8.95.

Steven Okulewicz

WALK DOWN any major street in any large city in the United States and sooner or later you will pass a sidewalk vendor selling quartz crystals or quartz-crystal jewelry. Walk into almost any local bookstore, find the "Occult" or "New Age" section, and you will see at least five books on the "healing power of crystals."

If you ask those who believe in the magical powers of crystals about crystals' curative properties, they will invariably tell you something like: "They're used in watches and computers for their ability to send, store, and transmit vibrations. We use them to bring the human body's own vibrational harmony into wellness again." They will also claim that crystals can increase your gas mileage if they are attached to your car's carburetor, make a refrigerator operate more efficiently, and heat your home in the winter (Rea, p. 306).

Just what is this mumbo jumbo about crystals and how does it fit in with other

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New Age beliefs? To find the answer to this question, I visited my local bookstore and from the wide selection on display picked out three books at random. *The Complete Crystal Guidebook,* by Uma Silbey; *Healing and Quartz Crystals: A Journey with Our Souls,* by John D. Rea; and *Lightseeds,* by Wabun Wind and Anderson Reed.

The authors of these three books begin by describing how they were first drawn to crystals (they tell us that the crystals actually selected *them*) and then cite chapter and verse about the use and magical properties of crystals dating back to the Egyptians, about references to crystals in biblical writings, and about the massive power generators made of crystal that supposedly existed in the mythical cities of Atlantis and Lemuria. The clear majority of these stories come directly from folklore and legend and are uncritically accepted as fact by the authors. They then challenge their readers to better themselves through the power of crystals so they can energize their bodies and their thoughts, encourage the development of their psychic potential, get in touch with their "higher selves," and even meet beings from different dimensions—including Kryon from Quadrille V (Rea, p. 36).

All of the authors use phrases like "It is said . . . ," or "It is well known . . ." when referring to some power or property of a particular crystal; yet their sources are never identified. They also ascribe human characteristics to the crystal: "The crystal will know . . . ," "The crystal will steer you . . . ," and "The crystal prefers . . ."

Crystals are the tools of the New Age trade, and sales of crystal jewelry are booming. The most popular variety of crystal is quartz (SiO_2) in all its colorful varieties, but many other minerals—e.g., topaz, beryl, and tourmaline—are mentioned, and the specialty of each is described. However, the authors of these three books, and most other authors of crystal books as well, have one thing in common: They don't agree with one another about much of anything concerning crystals.

All of the crystal-power proponents I have examined in print lack a basic knowledge and understanding of science, particularly geology and mineralogy. In Uma Silbey's book, for example, a crystal (the term is derived from the greek *krystallon,* meaning "ice") is defined as being naturally formed from the elements of silicon and water (?) after a lengthy time under heat and pressure upon sandstone (what about quartz and igneous and metamorphic rocks?), while Rea (p. 2) states that "natural quartz crystals were formed in quartz veins and pockets that pushed into earlier sandstone deposits roughly 100 to 350 million years ago." (The existence of igneous/ metamorphic rocks and the origin of this geologic date are not mentioned.) On the same page Rea states that crystals form in alignment with the earth's magnetic field; yet there is no mention of the 171 magnetic reversals that the earth has endured over the past 200 million years, nor to which reversal the crystals are aligned.

Wabun and Reed write that *Lightseeds* will *not tell you the truth* about crystals but will "shine light on a subject already radiant but recently shadowed by the hysteria of faddism." But later on they claim their book presents the "true facts" about crystals, which other books do not, based upon their research. Even when these authors consult the proper science textbooks, they cloud the issue or twist the facts around to suit their needs. For example, Wind and Reed consulted some well-known experts in the field of mineralogy and reference some mineralogy textbooks. After all of this research, they still contend that crystals form near the center of the earth (which they also proclaim is composed of fire; hence volcanic activity) and that crystals are part of the four elemental forces of earth, fire, air, and water. Moreover, at certain points they apparently cannot distinguish between a rock and a mineral or between atoms and molecules. Still they inform us that

minerals can grow in the earth only by two routes, as either intrusive or extrusive, entirely disregarding the existence of minerals within sedimentary and metamorphic rocks. They also describe the modular crystal-filled geodes (which are actually formed in a sedimentary environment) as being created by bubbles in intrusive rocks.

It is therefore ironic that Wind and Reed (p. 41) state: "The unfortunate mix of physics and metaphysics is partly to blame for misinformation [about crystals], as people in the last twenty years have begun adopting such terms as magnetism, electricity, and energy for uses science has never imagined, not only taking terms out of context but also creating a new language of inaccurate word uses. This practice has caused a good deal of confusion." Indeed, Wind and Reed could use themselves as prime examples.

All of these authors describe the many colored varieties of quartz and expound upon their various "healing" properties. There are more than 25 varieties of quartz, not counting coesite (the high-pressure variety), stishovite (4.3 g/cm^3, the high-density kind), and the other quartz polymorphs like tridymite and cristobalite, which are not even mentioned. Still, there is almost no agreement among them as to which variety of quartz does what, and there are many examples of two different minerals or varieties of quartz that are claimed to produce the same effect.

Especially misunderstood is the piezoelectric property of quartz, which is claimed to be the "scientific" basis behind crystal power. Piezoelectricity (the prefix *piezo* means "to press") was discovered in 1881 by Pierre Curie. He noticed that when quartz is subjected to a mechanical stress, such as a hammer blow, the crystal will produce a brief electric current along its surface. This idea was later applied to the development of an early form of sonar. Conversely, a quartz crystal will change its size and shape when an electrical current is applied to its opposite faces. Therefore when an external alternating current is applied to a crystal, it creates a rhythmic displacement of atoms, causing the crystal to vibrate (Hathaway 1988). The resulting vibration is used in radio oscillators for transmitting and receiving fixed frequencies and is the heart of timing devices in watches where the quartz crystal vibrates precisely at 32,768 cycles/second (Hathaway 1988). However, the amount of vibration depends upon the way the crystal is cut, its thickness, and the amount of applied voltage. Yet quartz is *not* the only mineral to possess piezoelectric properties. There are many others, including tourmaline and Rochelle salt (potassium sodium tartrate).

Quartz was chosen by the electronics industry mainly because it is one of the most physically stable and abundant minerals on the earth's surface. Also, its hardness, low cost, low solubility, and resistance to chemical weathering make it practical for many industrial applications. Yet the crystals used in electronic devices are artificially created in the laboratory and made of tiny slivers of ultra-pure quartz, not the large, impure varieties the New Agers use. Therefore, no matter how hard crystal fanciers squeeze their crystals (unless they whack them with a hammer), no energy will come out or go in.

Believers also claim that each crystal has its own energy field around it. In *Lightseeds,* Wind and Reed state that a half-inch quartz crystal projects an "energy field" around it that extends out to a distance of three feet, but there is no mention of the type of energy emitted or how this energy field is measured or observed. According to the authors, crystal energy is supposed to run through the crystal from its bottom termination and out of its top termination, but they fail to mention how the energy is supposed to flow through a broken crystal or through a crystal that posseses only one termination or through a crystal ball that contains no terminations.

Wind and Reed say the piezoelectric effect of quartz crystals does not "lead to the logical assumption that a crystal has the ability to store emotion or information" (p. 39); yet when Silbey and Rea discuss crystal programming, this is precisely what they say the crystals can do.

According to Silbey, the crystal is supposed to enable a person to get in touch with an internal energy force that is your "higher self," or "HS" for short. Others call this a "higher order" spirit or simply "God" (Rea). In any case, use of the crystals with meditation, yoga techniques, and breathing exercises "is said" to release one's unknown "true self" and tap into this vast potential of energy and information.

Wind and Reed caution readers against using the information in their book as advice for medical or psychological therapy, while Silbey and Rea give no such warning. I wonder how many people actually believe the claims of "crystal healing" and either forgo or delay traditional medical treatment or consultation. This would be especially serious when a life-threatening ailment is involved.

Initially, these books promise noticeable results right away and hint of greater things to come provided the directions for exercises, chants, and body positions are followed faithfully. Conversely, they later warn that only *some* of the techniques will work and that some take a few months for the results to become apparent. Rea (p. 12) tells his readers to experiment with different methods until they discover one that does work and to "have fun at it." Silbey (p. 5) claims that the crystal is "not really needed" and you can work without it, but that it helps "make things easier." However, if the user does not have "healing ability," then the crystal will not create something out of nothing. (What happened to its great power?) During "healing sessions" the authors refer to their clients as "patients" and administer "doses" of crystal healing. This sounds like the practice of medicine to me. Rea (p. 49) does not recommend taking any crystal "dose" orally, since "many gems are poisonous when taken internally."

Many contradictions occur throughout these books. For example, Wind and Reed (p. 73) do not recommend crystal healing for severely ill people or for someone with a life-threatening disease, but on the very next page they say: "Crystals can help a seriously ill person, if used by a very accomplished healer." They also recommend keeping a quartz crystal in the medicine cabinet between the aspirin and the acid-indigestion tablets, but they don't give the reason for doing so.

Before the power of a crystal can be unleashed by a "healer," it must be energized, cleaned, and grounded. To charge up the crystal, some authors recommend a wide variety of methods: placing it in the sunlight or moonlight, burying it in sand, putting it under running water or under a waterfall, or in ocean waves or rushing wind. Simply anything that makes you energetic will make your crystal energetic.

In order to remove the stored vibrational energy of a crystal, Rea (p. 12) recommends the salt and salt-water methods, in which the crystal is buried in salt or placed in salt water for one to seven days or, lacking access to salt or salt water, burying it in the soil. (How do you know when it's done?) He cautions that the sea salt, salt water, or soil should be (for some unexplained reason) aluminum-free. What he apparently doesn't realize is that all sea water contains small amounts of dissolved aluminum compounds and that all soils contain aluminum in the form of the mineral feldspar and its chemical weathering breakdown product, clay. He also recommends refraining from bringing the crystal in contact with any metal containing lead, since that will stop the flow of energy.

Wind and Reed as well as Silbey suggest other methods for cleaning or deprogramming crystal: blowing smoke from almost any source around the crystal (the

smudge method), exhaling on the crystal (the breath method) while holding it near your chest, or you could get fancy and use a video/audio-tape demagnetizer and wave it over the crystal a few times. (Rea thinks this method is unnatural.) Then "it is recommended" that the crystal be wrapped in a natural fiber until used, because the crystal will absorb color and energy from the fibers.

Depending upon which author you read, size, clarity, and brilliance are of variable importance when buying a crystal, the wholesale price of which has now increased about 1,000 percent. Crystals with inclusions, cracks, fractures, opaque clouds, or veils, are the most desirable. (That covers just about any type of crystal you can find.) Terminations or points on a crystal should not be chipped, since "it is said" that this causes a loss of energy and power, but Silbey assures us that broken crystals can be even *more powerful.* You can't lose! According to Wind and Reed, crystals also emit "negative ions" to produce a refreshing, harmonious atmosphere around them, but the process is unexplained.

Folklore about the medicinal powers of quartz and other minerals have been described before, for example, in Julius Wodiska's *Book of Precious Stones* (p. 232): "Many and various powers have been ascribed by man to gems; powers curative, talismanic, and supernatural (the word lithomancy meaning divination by stone); some gems could be made prophetic, others revealed the past; in the realm of medicine some were prophylactic and most of them were believed to be potent remedies. . . . Some were supposed to invest their possessors with wisdom, strength or courage and some were shields against danger, disease and death. The latter superstition is hard to kill in the slow dissemination of science and survives today, even in civilized and Christian countries." The last statement, written in 1909, still rings true today.

It has been stated many times that believers in pseudosciences are usually people who have given up on science and traditional medicine. Troubled people are looking for anything that will bring them comfort. I have illustrated a few of the more irrational and unscientific ideas behind "crystal power," which I fear will continue to find an audience. Its rapid growth in popularity can be readily observed among high school and college students and, in my view, is probably the result of inadequate science education (George Harlow, quoted in Page 1987). Knowledge is power and as science education is improved and critical thinking skills are encouraged, it is hoped that New Age beliefs in crystal power and other pseudoscientific ideas will have less acceptance among the public.

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Some Recent Books

Klass, Philip J. *UFO Abductions: A Dangerous Game,* Updated Edition. Prometheus Books, Buffalo, N.Y., 1989. 222 pp., $14.95, paper. Even though the hardcover edition of this valuable critical examination was published just one year earlier (*SI*'s review, Summer 1988, said it "successfully extinguishes most of the flames of 'abduction' unreason" and exposes "example after example of fraud, delusion, and self-deception"), this expanded trade paperback edition contains four new chapters. "Latter Day Sigmund Freuds" deals with a bizarre psychoanalytical theory advanced by abduction proponents; "Fantasy-Prone Persons" draws upon psychologist Robert A. Baker's article in *SI* (Winter 1987-88) and his talk at the November 1988 CSICOP conference; "UFOlogy's Pariah—or Messiah?" takes a look at Whitley Strieber's most recent activities; and "The 'Hopkins Syndrome' " offers concluding comments about Budd Hopkins and media contributions to the abduction mythology.

Krishtalka, Leonard. *Dinosaur Plots and Other Intrigues of Natural History.* William Morrow, New York, 1989. 316 pp., $17.95, cloth. Fresh and lively natural history essays by a Carnegie Museum paleontologist. Examines paleontology's culture and characters, "from bonehunters zigzagging, often stumbling, over that scattershot of clues to brilliant discoveries and incredible boners, ingenious science and disingenuous charlatans." Chapters on "The *Archaeopteryx* 'Hoax,' " "Monkey Trials," and "Scientific Literacy" may be of special interest to *SI* readers.

Paulos, John Allen. *Innumeracy: Mathematical Illiteracy and Its Consequences.* Hill and Wang, New York, 1988. 135 pp., $16.95, cloth. Insightful, witty look at how our "inability to deal comfortably with the fundamental notions of number and chance" plagues otherwise knowledgeable citizens. Filled with real-world examples of innumeracy—in stock scams, risk perceptions, diet and medical claims, newspaper psychics, astrology, sports records, insurance and law, drug testing, and more. Also explored is the link between innumeracy and belief in pseudoscience, including parapsychology, predictive dreams, astrology, and UFOs. Paulos is a mathematician who serves up a readable, entertaining, and valuable litany of examples of how our misunderstandings about numbers and chance continually mislead us.

Schultz, Ted. ed., *The Fringes of Reason: A Whole Earth Catalog.* Harmony Books, New York, 1989. 224 pp., $14.95, paper. A delightful "field guide to New Age frontiers, unusual beliefs, and eccentric sciences." This is an expanded, book-length work that grew out of the Fall 1986 special issue of the *Whole Earth Review* on the same subject. The comments made in our review at that time (*SI,* Winter 1986-87) still apply—"fascinating and worthwhile, . . . [a] clear-thinking, good-humored compendium of generally skeptical examinations and source materials" in an "appealing package." Still more source materials are added (all with address information), plus a variety of additional articles—on

millennialism, the hidden history of the New Age, crystal power (by Lawrence Jerome), channeling (by editor Schultz), parapsychology pro and con (Charles Tart and Susan Blackmore), spontaneous human combustion, flat-earth beliefs, perpetual motion, cryptozoology, and more. For balance, skeptics are given at least one good bashing (by Robert Anton Wilson). There is a cheerfulness, a directness, and an honesty in the treatment, all presented in a fresh graphic format. Everybody gets their say, from "the extravagant enthusiasms of true believers to the earthbound pronouncements of hard-nosed skeptics." The result is indeed an entertaining and informative excursion into unconventional world-views and a reminder, as Schultz says, of how myriad "peculiar notions"—whether or not literally true—"possess a haunting surreality and an arcane aesthetic that communicate directly to the unconscious mind."

Ward, Philip. *A Dictionary of Common Fallacies* (2 vols.). Prometheus Books, Buffalo, N.Y., 1989. 636 pp., $49.95, cloth. A welcome reprint and first U.S. edition of a work that won a "highly commended" award from the British Library Association's panel for most outstanding reference book of 1978. Some of the fallacies addressed: "Elephants are afraid of mice," "Fishes cannot drown," "Some people are double jointed," "Dowsers have an ability to find water wherever it exists," "The curse of the Pharaohs," "Coincidences are amazing," "The prophecies of Nostradamus," "The principle of Occam's Razor is that the simplest explanation is best," "Kepler believed in astrology," "The Hundred Years' War lasted for a hundred years," "Printing from moveable type was invented by Gutenberg," "Homeopathy," "Geller, Uri," "The Odic force," and scores more. The source for each critical analysis of "some of those popular beliefs which have been shown to be false" is given at the end of the author's entries.

—*Kendrick Frazier*

Articles of Note

Bethune, John. "New Age: Still Glowing" and "Getting New Age into the Marketplace." *Publishers Weekly,* December 16, 1988, pp. 14-34. See News and Comment, this issue. The same issue of *PW* has a short piece, "New Age Backlash," by Margaret Jones, p. 54.

Campbell, Steuart. "The Childerhose UFO: Fact or Fiction?" *British Journal of Photography,* September 29, 1988. Investigation into a bright object said photographed by a Royal Canadian Air Force pilot over the Canadian Rockies in 1956. Campbell suggests that the evidence points to a hoax.

Campbell, Steuart. "The Key to the Loch?" *British Journal of Photography,* September 22, 1988, pp. 12-13. Suggests that the Loch Ness monster is a creation of wake patterns of passing vessels.

Cassileth, Barrie R., and Helene Brown. "Unorthodox Cancer Medicine." *Ca-A Cancer Journal for Clinicians,* 38(3), May/June 1988, pp. 176-186. Review of the whole subject of unproved cancer remedies (on which Americans spend $4 billion a year), with suggestions for physicians whose patients may consider such remedies (about 50 percent of cancer patients do). Urges physicians to understand the fear cancer patients feel and the appeal of alternative practitioners who offer a comforting and compelling ideology. Suggests incorporating within traditional health care "the reasonable components" of unorthodox therapy (e.g., support, reassurance, clear explanations, giving patients a role in their own care) that patients often find lacking.

Crease, Robert P. "Top Scientists Must Fight Astrology—Or All of Us Will Face the Consequences." *The Scientist,* March 6, 1989, p. 9. Column by SUNY-Stony Brook philosopher calls on scientists to keep trying to educate the public about astrological pseudoscience. Provides several new examples of dangers of astrological guidance, including one astrologer who says the "dominant celestial patterns" require no action on earth's global warming or ozone depletion problems—"I see no need to do anything." Another claims the horoscope "is the only tool presently known which can be used to separate those who may be vulnerable to a sexual assault from those who would not." Crease says an "entire range of rhetorical and oratorical approaches" are needed to help the public understand the "grander and nobler" vision of science, where "we learn our way around in nature rather than merely fantasize about it."

Damon, P. E., et al. "Radiocarbon Dating of the Shroud of Turin." *Nature,* 337:611-615, February 16, 1989. Formal scientific publication by 21 authors of the earlier reported results of radiocarbon-dating of the shroud. (See *SI,* Winter 1989, p. 117; Spring 1989, pp. 296-299.) Gives details of the sample-removing procedures, measurement procedures, controls, and results. The conclusion: "The results of radiocarbon measurements [by accelerator mass spectrometry] at Arizona, Oxford, and Zurich yield a calibrated calendar age range with at least

95 confidence for the linen of the Shroud of Turin of A.D. 1260-1390 (rounded down/up to nearest 10 years). These results therefore provide conclusive evidence that the linen of the Shroud of Turin is medieval."

Doig, Stephen K. "Astrology (Skeptics, Believers) Can Match Wits Against Stars"; "The High Priestess of Psychobabble"; "Let's Get Fake Psychics Off the Airwaves"; "Conspiracy Theorist Bearden Is Bizarre, Yet Popular Speaker." *Miami Herald,* April 25, May 9, June 1, June 15, 1988. Excellent series of articles by the *Miami Herald*'s science editor. The second article is a critical look at Linda Goodman. All take a scientifically responsible view.

Emery, C. Eugene, Jr. "Are They Really Cured?" *Sunday Journal Magazine, Providence* (Rhode Island) *Journal,* January 15, 1989, pp. 7-13ff. Excellent journalistic investigation (by a reporter who won CSICOP's 1988 Responsibility in Journalism award) into the claims of faith-healer Ralph A. DiOrio. To find if DiOrio really produces documentable physical healings, Emery went to a five-hour service in November 1987 and over the next half-year investigated faith-healing claims from this and other services. Among two groups of nine people each, the follow-up interviews found that in each case either there was no cure or there was no documentation of a medical problem to begin with. Another group consisted of DiOrio's ten "best" cases. Of these ten, two people declined to participate after being told their medical records would be sought, and a third could not be evaluated because the physician refused to cooperate. Of the remaining seven cases, two people who said they had been cured were not actually cured, according to their doctors; three people were "cured" of a problem that may not have existed in the first place; and two more "cures" could be explained by conventional treatment or by the natural history of the disease.

Nauman, Art. "Skepticism on Paranormal." *Sacramento Bee,* February 5, 1989, p. B1. "Media Focus" column by newspaper ombudsman questions his own newspaper's credulous coverage of the paranormal. Asks why journalists raise questions and demand verification when covering government, law, war, peace, and such, "but when it comes to another universe of human interest—stories of the paranormal . . . of things that go bump in the night—they often suspend critical judgments." Lists numerous examples from the newspaper's pages, and concludes: "Apply the same scrutiny to poltergeists as you do to politicians." A highly commendable appraisal from within daily journalism.

Patterson, John W. "Toward Improved Relations Between the Advocates of Unconventional Notions and the Skeptics They Encounter in Academe and the Professions." *Magnets in Your Future,* Fall 1988, pp. 10-12. Iowa State University engineering professor explains the justification for being skeptical about many claims of unconventional ideas and inventions and why the dedicated skeptic should not be viewed as the enemy of the advocate but as an essential participant in any serious tests of new ideas.

Paulos, John Allen. "The Odds Are You're Innumerate." *New York Times Magazine,* January 1, 1989, pp. 1, 16-17. Essay on innumeracy by mathematician and author of new book on the subject. Part is devoted to how innumeracy and the attitudes underlying it provide fertile soil for the growth of pseudoscience.

Skolnick, Andrew. "Distinguishing Between Medicine and Quackery." *Editor & Publisher,* February 4, 1989, p. 19. News report on conference for journalists (co-sponsored by Foundation for American Communications) on science, pseudoscience, and quackery (see *SI,* Winter 1989, p. 123).

Williams, Stephen. "Fantastic Archaeology: Fakes and Rogue Professors." *Symbols,* December 1988, pp. 17-21. Strongly worded article on the "virus of pseudoarchaeology": "half-truths and gaudy frauds masquerading as real archaeology," published in tabloids, books, and magazines. Discusses the pseudoscience of Jose Arguelles (about the Maya), Barry Fell (prehistory of North America), and Jeffrey Goodman and George Carter (practitioners of fantastic archaeology about New World culture history). "Rogue professors have all the degrees and academic trappings of other professors. . . , but they aren't really what they seem. These scholars have lost the absolutely essential ability to make qualitative assessments of data they are studying. They have forgotten about testing and veracity as well."

—*Kendrick Frazier*

'89
Skeptical Inquirer
HEY, IF TIME-LIFE SAYS THERE'S PYRAMID POWER, THERE'S PYRAMID POWER. IT'S A MYSTERY OF THE UNKNOWN.
NOT ONLY THAT. YOU GET TEN POWER CRYSTALS.

Follow-Up

Reinvention of Subliminal Perception

James V. McConnell

THERE'S AN old saying in science that "every ten years someone reinvents the wheel." Translated, this means that scientists often do rather a lousy job of searching the literature. A case in point: subliminal perception.

In two consecutive issues of the SKEPTICAL INQUIRER you printed comments/queries on subliminal perception. Take Tom McIver's discussion of "subliminal messages" in the Fall 1988 issue (pp. 54ff.). McIver discusses James Vicary's infamous "Popcorn/Coca-Cola" experiment at Fort Lee, New Jersey. (According to my recollection, the study was performed at Fort Dix, not Fort Lee.) Shortly after Vicary announced his results in 1956, the American Psychological Association asked me and two of my colleagues at the University of Michigan—Richard L. Cutler and Elton McNeil—to look into the matter. We published our survey of the research in this area two years later (McConnell, Cutler, and McNeil 1958). Israel Goldiamond published a lengthy discussion of the subject in that same year (Goldiamond 1958).

In 1960, I gave an invited lecture on this topic at the annual meeting of the American Psychological Association. In my talk, I described post-1958 research by Cutler, McNeil, and me that cast considerable doubt on the usefulness of subliminal advertising techniques. I also mentioned a dozen or so other post-1958 studies showing that, if anything, the use of subliminal "inputs" in advertising causes negative rather than positive results. No scientific study published since then contradicts this position.

During the early 1960s, I was part of a group of social scientists who prepared a survey of "psychological techniques" for the Department of Defense much like the National Academy of Sciences report described in the Fall 1988 SKEPTICAL INQUIRER. We drew very similar conclusions to those reported by the recent NAS committee. If you know anything about the "military mind," you won't be surprised to learn that the military ignored our conclusions, as they surely will ignore those of the present committee. My role in the early work was that of surveyor of the literature; I published my findings in 1966, and have referred to that paper frequently since then (McConnell 1966, 1989 [1974]).

I have continued to keep up with work in this field. Indeed, while preparing

the sixth edition of my introductory psychology text, *Understanding Human Behavior,* I searched *Psychological Abstracts* using a computerized database called DIALOG. Unfortunately, this database only goes back to 1966. Even so, I found 219 references that included the term "subliminal perception," and another 2 that included the term "subliminal advertising." An extensive reading of these articles suggests that nothing that has been published since 1958 challenges the conclusions Cutler, McNeil, and I drew some 30 years ago. However, neither McIver nor anyone else writing on this topic in the SKEPTICAL INQUIRER has cited (or even seems aware) of 99 percent of the extant scientific literature.

Several questions therefore occur to me: First, why don't people interested in a topic bother to search the literature first, before sounding off? Such an approach would surely save them time, and save space in your magazine. (Even a cursory literature search would surely have turned up our 1958 article, since it has been reprinted in ten books of readings, the most recent of which was published in 1974.)

Second, does subliminal perception exist? Yes, of course it does. The first scientific studies we found reported in the literature date back to the mid-1800s, when a European researcher named Suslowa reported an odd finding in his work on what is called the "two-point threshold." In Suslowa's experiments, he applied either one sharp point or two to the skin on each subject's back. He then asked the subjects to tell him whether they consciously perceived one point or two. When the points were very far apart, all of the subjects perceived two points. When the points were very close together, Suslowa's subjects could not consciously perceive the difference between one point or two. However, *when Suslowa forced his subjects to guess,* they were more often right than wrong. Hundreds of reliable studies since then have shown that, under laboratory conditions, subjects can respond at an above-chance level to stimuli too weak to break through to conscious awareness (McConnell 1966, 1989 [1974]).

Third, should these findings surprise us? Of course not. Even back in the 1950s, we knew that one of the chief functions of the lower centers of the brain is that of screening out weak sensory inputs before they reach consciousness. However, we also know that under certain special conditions, these "nonconscious" inputs can affect behavior.

Fourth, what are the "special conditions" under which subliminal stimuli can affect behavior? Study after study shows that the perceiver must be *forced to guess* about the stimuli for the effect to occur. Furthermore, the perceiver usually must be highly motivated to guess correctly (either by promise of great reward for being right or by threat of severe punishment for being wrong—or both). More than this, the effect almost always occurs in laboratory settings, where it is easy to demand that the subjects respond. There is not a single study in the literature (that I can find) in which "subliminal messages," such as in magazine or television ads, in movies, or when presented in background music in department stores, etc., have been found to have any significant effect on behavior in "natural settings."

Finally, I have frequently been called on by television and newspaper reporters to comment on the use of subliminal messages to reduce thefts in stores or to increase motivation in athletes. My response has always been, "It's a bunch of bunk." I have repeatedly challenged Hal Becker (and others) to produce one reputable scientific study showing their "subliminal tapes" actually work under controlled conditions. The response I always get is, "Our tapes work; therefore, we don't need to do scientific studies to prove our case." You can imagine how I react to such nonsense.

The differences between "subliminal perception" and "subliminal advertising" are

about the same as those between astronomy and astrology. Indeed, the effects that the gravitational "pull" of the planets have on human behavior are about as strong as those that subliminal television ads have on consumer behavior.

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From Our Readers

In defense of homeopathy

Ever since the recent controversy in *Nature* on microdose research, Martin Gardner and James Randi have become instant experts on homeopathic medicine. And yet, in their recent articles in the SKEPTICAL INQUIRER (Winter 1989), they completely avoided mention of several well-controlled double-blind trials that have tested the efficacy of homeopathic microdoses.

They didn't mention the double-blind clinical trial on patients with hay fever that was published in the *Lancet* (October 18, 1986) or the double-blind clinical trial on patients with rheumatoid arthritis that was published in the *British Journal of Clinical Pharmacology* (September 1980). They also didn't mention the laboratory studies published in *Human Toxicology* (July-August 1987) that showed that microdoses of arsenic helped rats excrete crude doses of arsenic in their urine and feces. And they didn't mention the well-controlled double-blind trial that evaluated basophil degranulation that was published in the *British Journal of Clinical Pharmacology* (April 1988).

In addition to these studies, there are at least a dozen other well-controlled trials that have been published in homeopathic journals.[1] Some trials testing microdoses have produced negative results, though every one of these experiments did not allow for individualization of the homeopathic medicine, thus stacking the experiment against the possibility of success. Also, it is to the credit of these investigators of homeopathy that they have published such negative findings, since we too want to learn when and where experimental results are positive or not.

Gardner's and Randi's strong biases become evident by the way they choose to attack homeopathy and its proponents as well as by the errors in their writing. Gardner calls homeopathy a "cult"—the latest hot word to condemn a group. If Gardner thinks that every homeopath thinks the same way about medical issues, he is wrong. If Gardner assumes that homeopathic practitioners do not readily refer patients to other health-care specialists, he is wrong. Considering that research has shown that patients who seek homeopathic care tend to be more educated than those who do not,[2] considering that the vast majority of practitioners of homeopathy are medical doctors (except in Asia), considering that a *British Medical Journal* survey discovered that 42 percent of British physicians refer patients to homeopathic doctors (June 7, 1986), one must wonder what Gardner meant when he called homeopaths and their advocates "cultists."

James Randi asserted that Benveniste had not done his experiments "blind." This is an error. The only time Benveniste allowed his experiments to be not blind was during the first three days in which Maddox, Stewart, and Randi supervised the experiments . . . and this nonblinding was only done at their insistence. The Benveniste team knew which batches received the microdose and which received the placebo, but this information was not available to the person reading the slide in the microscope. To assume that the person doing the reading knew in advance which slides were the controls is to assume a psychic phenomenon. I don't assume that this was the intention of the *Nature* team.

In addition to the variety of scientific evidence that suggests that the microdoses have biological action and clinical efficacy, there is also strong empirical evidence that the medicines may indeed work:

1. Homeopaths determine what a medicine is good for treating by conducting drug tests called "provings." These drug tests are on human volunteers, and they assess the symptoms that the substances cause in overdoses. Homeopathic literature is replete with single- and double-blind trials in which subjects were given crude doses or potentized doses of substances. The very fact that potentized doses of substances can cause symptoms when given in continual doses strongly suggests that these microdoses have biological action.

2. Hundreds of American veterinarians and perhaps up to a thousand European veterinarians commonly rely completely on homeopathic medicine in the treatment of diseases in various animals.

3. Homeopathy developed its greatest popularity in the U.S. and Europe during the 1800s because of its impressive successes in treating the infectious-disease epidemics of that day.

4. Patients who have a chronic disease often experience a short, temporary exacerbation of symptoms after taking a homeopathic medicine. This "healing crisis" is experienced both by patients who are and aren't informed that it may happen. This healing crisis occurs considerably more often than does the norcebo effect (the worsening of symptoms found to occur after administration of a placebo) in nonhomeopathic patients.

Randi will claim and even insist that it is improper to call the homeopathic medicines "microdoses" since beyond a certain dilution there should not be a "dose" or "microdose" of anything. If, in fact, the homeopathic medicines have absolutely no biological or clinical action, he is correct. If, on the other hand, the homeopathic medicines have some action, then "microdose" is indeed an accurate term. I am confident that Randi and other skeptics will soon recognize *microdose* as a completely appropriate reference to the homeopathic medicines.

Despite the serious skepticism that many of your readers have about homeopathy, I actually feel quite at home with the type of probing and cautious doubting they display. I personally feel that some of your readers will ultimately play instrumental roles in the continual refinement of the science and art of homeopathic medicine. I invite them and others to seriously investigate homeopathy. I even challenge them to consider trying to use some of its medicines by seeking the care of educated homeopathic professionals.

Dana Ullman, M.P.H., Pres.
Foundation for Homeopathic
Education and Research
Oakland, Calif.

Notes

1. For detailed information on contemporary homeopathy and homeopathic research, see Dana Ullman, *Homeopathy: Medicine for the 21st Century* (Berkeley: North Atlantic, 1988); Dana Ullman, *Monograph on Homeopathic Research,* 2 vols. (Berkeley: Homeopathic Educational Services, 1981, 1986); Beverly Rubik, "Report on the Status of Research on Homeopathy with Recommendations for Future Research," *British Homeopathic Journal* (forthcoming).

2. R. L. Avina and L. J. Schneiderman, "Why Patients Choose Homeopathy," *Western Journal of Medicine,* 128 (April 1978): 366-369.

For further background about, and an evaluation of, homeopathy, see Stephen Barrett, M.D., "Homeopathy: Is It Medicine?" in the Fall 1987 SKEPTICAL INQUIRER.—ED.

James Randi responds:

First, neither Martin Gardner nor I "have become instant experts on homeopathic medicine," as suggested by Ullman. However, we are *experts on obvious nonsense.*

The "well-controlled double-blind trials" referred to by Ullman were not the subjects we were writing about in the Winter 1989 SI. *We were writing about the Benveniste/Clamart work published in* Nature. *A scientist, I always understood, deals with one matter at a time. I have tried to follow that excellent*

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practice. The other work will be coming to my attention later this year.

Ullman exults that, in his opinion, "it is to the credit of these investigators of homeopathy that they have published . . . negative findings." Is it so surprising that they were honest? Is such a virtue all that rare?

I certainly agree with Gardner's designation of homeopathy as a "cult." It meets many of the criteria, including the invention of attitudes or statements on the part of those who oppose its notions and claims.

In both of his "If Gardner . . ." suppositions, Ullman is incorrect. Martin Gardner makes neither of those assumptions. This "If . . ." method of handling an argument is inexcusable. If Ullman thinks that all critics of homeopathy are untrained, amateur observers, he is wrong.

Education does not always make one smart. Educated persons are more likely to accept statements that originate with those who list letters after their names and to believe them to be honest, competent persons. Perhaps that is one reason why, as Ullman points out, those "who seek homeopathic care tend to be more educated than those who do not."

Ullman is quite wrong concerning how "blind" Benveniste's tests were. Only *the slide-counting was blind. By Benveniste's own admission, he made no provision for blinding the preparation of the "dilutions," where the primary blinding* should *have been done, along with careful control of the preparation of those samples. The* Nature *team applied those controls, and the tests proved negative.*

The remainder of Ullman's letter is the same tedious argument. We are concerned only with the matter we investigated, not with the propaganda that has been the single leg upon which homeopathy has supported itself until the Benveniste affair. Let us confine ourselves to the concern of the moment.

He writes, "Randi will claim and even insist that it is improper to call the homeopathic medicines 'microdoses.' " Yes, I do, because it is a self-evident fact, and not an opinion. No argument is needed on that aspect. I will go further. It is even incorrect if it is proved that the homeopathic "doses" are effective. No substance is no substance.

I eagerly accept Ullman's invitation to "seriously investigate homeopathy." It deserves my attention.

Quick critical analysis

To my knowledge, the *first official French scientific reaction* to the publication of the paper by Davenas et al. (including J. Benveniste) in *Nature,* June 30, 1988, was the critical analysis of this work I immediately did for the Minitel service ZET of the University of Nice (International Minitel service 36.15 + ZET, for ZETetic information on all "paranormal" subjects).

This analysis concluded that a major (and also various "minor") methodological error was present and that the alleged information contained in the "surprising rhythmic fluctuation in the activity of the solution" was in fact nonexistent (and also that data were sorted out and that the percentages showed curious dispersion values).

Contrary to some allegations, it was not necessary to wait for the results of the *Nature* visiting team, July 27, 1988, and their observations of the laboratory notebooks to be able to say that the positions of the peaks of "degranulation" were *not* reproducible.

This last fact was demonstrated in my ZET "publication" (clearly showing that the work of Davenas et al. was presenting a periodic signal of period L with . . . a positioning latitude of L/2).

The information has been publicly available on Minitel ZET since July 6, 1988.

Henri Broch
University of Nice
Nice, France

A report on Dr. Broch's Minitel service appeared in our Spring 1989 issue, p. 245.—ED.

Spinning on science's shores

Martin Gardner's excellent discussion of the "Water with Memory" affair reveals once again the hostility that typically comes from fringe science when challenged on scientific grounds. Instead of putting their energy into coming up with a repeatable experiment as free as possible from methodological flaws, fringe scientists usually expend it in creating a blast of hot air and *ad hominem* attacks on their critics. It is a pitiable performance.

Sadly, the dilemma of much of fringe research is the dilemma of a man in a boat who only rows from one side: No matter how long or hard he works, he never succeeds in doing anything except go in a circle, never realizing that it isn't his dedication or his strength but his method that is flawed. Until fringe research puts both its oars in the water, it is doomed to remain where it has always been: spinning aimlessly on the shores of science.

Stephen Peterson
Kentucky Assn. of Science
Educators and Skeptics
Versailles, Ky.

No careless rinsing here

I believe that an observation of mine might explain and perhaps even vindicate Jacques Benveniste and his homeopathic findings.

My wife recently congratulated me on making her Earl Grey tea taste just like Sunlight Liquid. The only possible conclusion is that she suddenly developed the ability to detect Sunlight detergent residues at the parts per quadrillion level.

Since I have a Ph.D. in chemistry, any suggestions of careless rinsing of the teapot on my part are, of course, irrelevant and inadmissible.

Joseph Aspler
Montreal, Que.
Canada

Make creationists defend their views

The article "Certainty and Proof in Creationist Thought," by J. E. Laferrière (*SI*, Winter 1989), states that "debates between creationists and evolutionists often appear to be conflicts between two equally unpersuadable and closed-minded groups" and that evolutionists assert that they are presenting "proved facts of science."

I believe this is incorrect, and that such a statement benefits creationists by placing them on an equal footing with scientists, for which they constantly strive.

In my opinion, debating evolution with creationists is best avoided in favor of discussing creationism. A classical confrontation between an evolutionist (Steve Obrebski) and a creationist (Duane Gish) took place at the University of California, Berkeley, on April 2, 1982, in front of an audience of more than 1,000. Obrebski said, after Gish had been holding forth for about 90 minutes (my transcription from videotape):

> I find it very disturbing that someone such as you would get up and make such statements in such a partial way and not really indicate to the audience that we are doing—those of us who are scientists or evolutionary biologists—precisely what science requires, and that is arguing contending hypotheses, presenting data and observations and analyses on contending hypotheses, and attempting to approximate the truth about laws of nature. Now . . . the director of your institute has claimed that there are concentrations of good and bad angels around the earth, that UFOs are manifestations of the Devil or the dark forces, that our inanimate souls can travel faster than light, that although stars can't affect us, the evil spirits associated with them can, and that the scars on Mars and the moon, the asteroids and the rings of Saturn and meteor showers are a reflection of some big turf battle between Satan and Michael and the angels. And you have said yourself that there was no problem of incest among the progeny of Adam and Eve because God made them genetically perfect. Now I ask you sir . . . what are the facts? How would

> you disprove them? Where do you get the material evidence for those facts and how can you claim to be doing science when you make such wild and tentative assertions and then come in here and mix up what the evidence is and claim that you are doing creationist science?

Gish responded in confusion, as follows:

> I have not gone into this matter of religion. I have stuck strictly to science here tonight. It is always the evolutionists who want to bring in the matter of religion. This man has been ridiculing the Christian faith.

Of course it is creationists, not evolutionists, who "bring in the matter of religion." The lesson is: Ask creationists to explain such items as how Noah fed the dinosaurs on the Ark.

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Joseph Laferriére inexplicably dignifies "Creationism," a religious quackery, by calling it a "theory." While it is true that the term has many uses, "theory" when applied to evolution or relativity usually means an explanation derived from evidence and which makes explicit its method. Darwin's *theory of evolution* is just that, a theory about evolution. Lamarck, Democritus, and others before have had their own theories of change over time, as do Gould and Eldridge today.

Laferriére writes that some evolutionists assert that "current evolutionary perspectives represent 'proved facts of science.' " Just who are these evolutionists? Does he tar Gould and Eldridge with the same brush? I really doubt that Laferriére can produce anyone who fits his description.

But what evolutionists *do* say is that evolution is a fact: there *have* been enormous changes over long periods of time. What is not "fact" is this or that particular theory, no matter how well buttressed by supporting evidence (another kind of fact). Creationists reject evolution per se, and no amount of evidence or any reasoning will move them. The problem in any debate with them is to define beforehand what constitutes evidence, what rules of rational discourse they are prepared to accept (usually none), and so on.

Offering evidence, either empirical or rational, is a way of showing what one's explanation means. It is in this sense that many people speak of "proof," a kind of showing. Creationists are tied to the idea of some incontrovertible mathematical proof or formula; their narrow-mindedness keeps them from seeing other kinds of proof or from even understanding properly the kinds they do admit.

The more general meaning of proof—a kind of showing—is precisely what applies to the work of science. In this sense, science does indeed *prove* things; it is no misconception, as Laferriére says.

For example, evolution is a proved fact of science—empirically, evolution has been demonstrated over and over again; rationally, nothing of what we know in a number of disciplines in and out of science would make any sense without it. What is not proved is that the Darwinian notion of slow, steady, progressive change is the best explanation of evolution. Creationism, however, is not interested in this question.

In any public debate with creationists, I always make clear the ground rules before starting; I feel no shame in reminding them, either, when they stray from the rules, as inevitably they do. And I always assure the "neutrals" in the audience that the question of creationism is one of religious dogma from which they can make no appeal, while that of evolution is one of scientific investigation, which not only allows but asks for further appeal. The first is a closed study for the closed-minded; the second is an open study for the open-minded.

Monty Vierra
Fukuyama, Hiroshima
Japan

NRC and Jahn's results

I found your review of the NRC's study into human performance (*SI,* Fall 1989) excellent, and I compliment you on a fine piece of work.

As a practitioner in the management sciences I was, however, a little troubled by the discussion on page 40 of the hit-rate obtained by Schmidt and Jahn.

While a difference of 0.02 percent (between 50 percent expected and 50.02 percent observed) appears superficially insignificant, a great deal of care needs to be exercised when discussing this type of statistical phenomenon.

If I conducted an experiment comprising ten trials (like tossing a coin) in which the probability of a particular outcome (say a head) in a single trial was 1/2, I would "expect" to get five instances of that outcome. Six heads would not be unduly surprising even though this is 60 percent of the outcomes. In fact the probability of getting *six or more* heads in such an experiment is over 0.36—it will happen about one in three experiments (ten trials in each).

Now consider an extended experiment of 100 trials. While I would expect to get 50 heads, an actual result of 60 (60 percent) is now rather more surprising because the probability of getting *60 or more* heads in such an experiment is now close to 0.029—it will occur only 29 times in 1,000 experiments (100 trials in each).

The point here is that as the number of trials *increases,* the difference between expected results and "surprising" results *decreases.*

In 78 million trials (referred to by the NRC study) a 50.02 percent success rate is *highly significant.* The probability of *50.02 percent or greater* success in 78 million trials is so low (about 0.0001) *that we cannot reasonably accept the 0.02 percent difference as arising by chance.* We must therefore conclude that other mechanisms are represented in the data.

John R. Smyrk
Sigma Management Science
Pty. Limited
Dee Why, N.S.W.
Australia

More on morphic resonance

I have been following the "morphic resonance" theory debate in the SKEPTICAL INQUIRER. I must agree with Fedanzo and Wingfield that the Varela/Letelier experiment is invalid, for the reasons they stated.

However, Sheldrake states (*SI,* Winter 1989, p. 203): "The hypothesis makes a wide range of testable predictions. For example, when new kinds of chemicals are crystallized repeatedly, their crystals should tend to form more readily all over the world, owing to the cumulative morphic resonance from previous similar crystals." I have three observations on Sheldrake's hypothesis:

1. There are three variable factors that affect the speed of crystallization independent of any "morphic" field that may or may not exist: (a) Temperature. Crystals usually form faster at lower temperatures. (b) Percentage of impurities and solvents. The purer and more concentrated the liquid form, the faster it will crystallize. (c) Presence or absence of nucleating agents or seed crystals. Lack of any nucleating agent may delay or even prevent crystallization.

An experiment could be devised by repeatedly melting and recrystallizing a substance and measuring the crystallization time, but if the three variables are not controlled, the results would be invalid—the temperature may drop faster than expected, impurities and solvents may evaporate or precipitate out, some small crystals may not be fully melted. The result: faster crystallization times regardless of any "morphic" field.

2. Pure elemental silicon crystals do not occur in nature, and before the semiconductor revolution they existed only as tiny lab samples. For the past 30+ years, ultrapure (99.98 percent) silicon has been crystallized in ever-increasing quantities, most of it in crystal-growing furnaces with precise temperature control and a single seed crystal for monocrystalline growth. The growing crystal is pulled upward, with a feedback device monitoring the diameter of the crystal bole. Any increase of crystallization speed would cause an increase in diameter, and the

feedback device would then increase the crystal pulling speed to compensate.

The semiconductor manufacturers have (inadvertently) run a test that fits both Sheldrake's and my criteria. In spite of the tons of new silicon crystals formed, there has been no detectable change in crystal growing speeds, thus no "silicon morphic field."

3. If growing crystals produce and are influenced by morphic fields, are morphic fields required for crystal growth? If so, that would create a classic "chicken and egg" paradox. I think even Sheldrake would have to agree that new crystals (and other "self-organizing systems") could be formed without any preexisting morphic fields. What organizes new (nonmorphic field) crystal growth? Existing theories of atomic and molecular bonding explain the shaping of crystals and do not require any previously existing forms to create new forms.

The "Morphic Resonance theory" is in bad shape. It has no supporting evidence, there is evidence against it, there are other theories that better fit observations, and the other theories render it unnecessary.

Chris Muir
San Jose, Calif.

I have to agree with Sheldrake and many other writers that Varela and Letelier's experiment was flawed. It would have been much more direct and far simpler to observe whether quartz clocks run progressively faster, if that is what they speculate the hypothesis predicts. As for the hypothesis of formative causation, one has to wonder what phenomena it seeks to explain.

Has the semiconductor industry found that producing silicon crystals has become inexplicably easier (discounting improvements in the process)? Do new synthetic compounds begin appearing spontaneously in unexpected places? If we should expect that it would become progressively easier to teach old rats new tricks, why didn't it become easier to teach children new math?

If morphic resonance is a "nonenergetic process" that works at the quantum level, what can it influence that doesn't involve energy? If Sheldrake accepts Einstein's proscription against information traveling faster than light, then we should question the notion of a homogeneous and isotropic universe. The rate at which elements heavier than hydrogen and helium form in distant galaxies should be anomalous functions of the local morphic fields. These fields influence "self-organizing systems like atoms . . . organs, and organisms," a range of 13 or 14 orders of magnitude in size. Is there a theoretical (or empirical!) upper limit to the size of the system? Or should we expect to see galaxies and clusters of galaxies with different and distinct characteristics depending on the direction in which we look?

If these fields influence organisms, epidemiology should be in chaos. A mutant virus appearing anywhere could show up everywhere without having to wait around for a contact or vector to transmit it. Containment systems for recombinant DNA experiments would be worthless. Unless they could keep the morphic field from leaking out, genetically engineered *E. coli* would start popping up in salad bars all over the world. Attempts to patent new organisms would be exercises in futility.

Finally, returning to the question of crystals, why do snowflakes display such enormous variety when it should be much easier for them all to conform to the morphic field that was established by the first snowflake? Formative causation is an imaginative answer, but what is the question?

Ernest L. Asten
San Francisco, Calif.

Nonphotographic Kirlian effect

Those interested in investigating the Kirlian effect (*SI*, Winter 1989) might like to know that it can be done without having a photographic laboratory available.

The spherical gas plasma lamps sold as home decorations in many department stores and electronic appliance outlets

show the same "aura" as appears in Kirlian photographs when one looks through the sphere at one's hand pressed against the far side. The effects of changes in pressure and humidity can be demonstrated immediately without recording the sequence of tests for comparison with the results at some later time.

The mechanism, making visible the corona discharge produced by a high-voltage, high-frequency electric field, appears to be identical to that used to make Kirlian photographs. The lamps offer wide scope for the experimenter, since they usually provide adjustments for both the voltage and the frequency. Photographing the display should be possible. Magicians note: The electric field near the lamp is high enough to make hand-held neon and fluorescent tubes glow.

A few years ago these lamps were custom-made artworks and sold for around $2,000. I bought mine from Radio Shack, where it is called the IllumaStorm and now sells for around $120.

Touching the lamp normally produces no sensation worse than slight warmth. However, users should note that if a metal object in the hand is touched to a metal object close to the lamp a spark can be drawn and a slight shock felt.

Tom Napier
North Wales, Pa.

Chaos theory next target?

My crystal ball tells me that the next piece of scientific knowledge that the pseuds will try to appropriate to bolster their ideas will be Chaos theory. They won't understand it, of course, but then they didn't understand quantum mechanics either. I predict that a justification for (nonexistent) psi effects will be found in strange attractors. I foresee that the explanation for the near infinite dilutions favored by homeopaths will lie in Mandelbrot fractals. I expect that the creationists' contraction of 15 billion years into 6,000 will be justified by the use of Feigenbaum's methods. I foretell that the next attempt to show that evolution contravenes the Second Law will be based on the Lorenz attractor. I think that two years will be enough to see if my predictions are fulfilled. Will I be any better than the professional diviners?

Keith Lockett
New Plymouth
New Zealand

Not long, we suspect

Regarding the latest on the Shroud of Turin (*SI*, Winter and Spring 1989), how long will it be before we hear from the creationists that carbon-14 failed the Shroud of Turin test?

L. Frederick File, Jr.
Geneva, Switzerland

Pauling's forays

Regarding letters by Douglas Tracy and Heinz Schulze (Winter 1989) critical of my inclusion of Linus Pauling among scientists who step beyond their areas of acknowledged accomplishment, in my article in the Summer 1989 issue I had assumed that elaboration on Pauling's forays into vitamin therapy was by now unnecessary, and my aim in that article was conciseness.

I would not presume to impugn the monumental achievements of Professor Pauling, which were, after all, recognized by the awarding of *two* Nobel Prizes—an honor shared by no one since Madame Curie. Tracy lists the areas of Pauling's contributions—but note that nutrition is not one of them. "Pauling's pronouncements" on the efficacy of massive doses of vitamin C ("reported in books he has written") have been repeatedly refuted by controlled double-blind tests conducted at Britain's Cold Center, by Canadian research teams, and by the NIH. Summaries of the history of this controversy are reported in general nutrition texts; a good very recent one is Helen A. Guthrie's (1989). Because of the legitimate reputation of this great man, many people today still "consider Pauling qualified to expound on the value of

vitamin C." Regretfully, the clinical evidence has been statistically insignificant at best, overwhelmingly negative at worst—and it has emphasized the harmful side-effects (e.g., in the resultant release of oxalic acid) apparently ignored by Pauling and his colleagues.

I assure Schulze that I do read beyond anthropology. If he is indignant simply because of my choice of examples to illustrate my point, that's his right. Pauling's case is notably illustrative, however, and I intended my examples to be disparate. But by focusing critically on them, the point may be missed.

Phillips Stevens, Jr.
State Univ. of New York
Department of Anthropology
Buffalo, N.Y.

Douglas P. Tracy writes that Linus Pauling is qualified to comment on vitamin C since he is noted for his work in organic chemistry, and "this includes organic molecular structure, protein molecular bonding, immunity, antigens, etc." and that his research group has made "studies of the efficacy of vitamin C which are reported in books he has written." First, although organic chemistry is part of many fields, knowledge of chemistry does not impart automatic knowledge of "immunity, antigens, etc.," let alone of nutrition and clinical medicine. These disciplines, studies, and practices are separate, with different investigational methods, and encompass additional fields, such as epidemiology and physiology—automatic knowledge of which Pauling cannot claim.

It comes as a shock to some that Pauling has not done any independent studies of the efficacy of vitamin C. His books on the common cold and the flu are polemics—reviews of selected publications and misinterpretation of scientific literature. For instance, he omits the five most important papers on vitamin C and colds and flus, all of which show no significant effect. His book on cancer reviews work done by a physician colleague, Ewan Cameron. Pauling apparently helped to analyze some data, but the data were improperly collected and the conclusions are erroneous.

Despite his brilliance in physical and organic chemistry, Pauling does not quote or interpret the evidence for vitamin C accurately.

Heinz Schulze then criticizes author Phillips Stevens, Jr., for criticizing Pauling for speaking outside his area of expertise, and says Pauling is due an apology. I think that one can speak out on any subject one pleases. One just takes the risk of being wrong. In the case of vitamin C, Pauling is wrong and Stevens is correct. Pauling owes the scientific world an apology.

Wallace I. Sampson, M.D.
Mountain View, Calif.

Complications of precognition

I read, with considerable interest, "Pathologies of Science, Precognition, and Modern Psychophysics" by Donald D. Jensen (*SI*, Winter 1989). His discussion of the characteristics required in data for proper statistical evaluation was clear and forceful.

However, I found myself wondering why he chose precognition as his target ESP trait to examine. He seemed unnecessarily willing to concede the existence of a "signal" in precognition data (substitute "Catastrophe Occurs" for "Signal Present"). This highly questionable concession would have been unnecessary, or at least more palatable, had he chosen simple telepathy.

In telepathy, the presence of a signal is at least intended, whether it is present or not. In precognition there are too many variables to so readily admit that a signal is present. Here are just a few questions that came to mind.

Do all catastrophes generate signals prior to their occurrence?

What other types of events might generate signals?

How long prior to the event is the signal present?

Is the signal continuous?

Must a loved one be involved for the signal to be received? There was an im-

plication that it could made a difference.

If the catastrophe is a plane crash, for instance, does the signal come from the plane, the pilot, the loved one, etc.? What about natural disasters?

This could go on and on, and a very tangled web can be built around these questions. I know that these are not the intended issues of the article, but they certainly became the focal point of my thinking after reading it.

If only he had dealt with something simpler, like telepathy. . . .

Robin McMeeking, CDP
St. Clair Shores, Mich.

Donald D. Jensen responds:

McMeeking asks why I chose to discuss precognition rather than telepathy; it was because methods for preventing response bias from being mistaken for detection are already commonly used in investigations of mental telepathy. The usual technique is to force both "sender" and "receiver" to choose one out of a small number of possible targets on each of a series of trials; this acts to control response bias, statistical significance testing is made possible, and interpretation is straightforward. The evidence commonly presented in popular publications as justification of belief in precognition is of another sort; subjects may or may not make a response on a particular trial.

The main point of my article was not merely to argue for statistical evaluation of data; the point was that there are techniques of data analysis that can separate the effects of response bias from those of detection of stimulation in such situations, and that those methods should be used to evaluate data purporting to demonstrate precognition. We must count, not just hits, but false alarms, misses, and correct rejections if we are to obtain unambiguous evidence of precognition.

I agree with McMeeking that, were unambiguous data to be obtained, a host of interesting questions would be available for research. But first we must demonstrate the phenomenon unambiguously before it pays to speculate about its characteristics; and that, in my opinion, has not yet been accomplished. Let us first capture the critter before we attempt to dissect it.

Reply to 'Koko' letters

My short piece about Koko (Psychic Vibrations, Fall 1988) has produced a more polarized reaction (Letters, Spring 1989) than practically anything else I have written. Those who agreed with my skepticism pronounced it witty and delightful, while those who credit Koko's alleged linguistic skills waxed with indignation.

At bottom, the matter reduces to this: It is purported that Koko possesses considerable linguistic ability. She can allegedly formulate, and comprehend, coherent phrases and even sentences. Michael is alleged to share this skill, although to a lesser degree. Thus, since these two gorillas are supposed to be clever apes whose linguistic accomplishments are frequently celebrated, it does indeed seem puzzling to find them behaving like dumb animals in a zoo, unable to master so natural and simple an action. Since the process of copulation is *certainly* no more complex than other concepts that Koko and Michael are alleged to have mastered, I still cannot see why Michael cannot understand what is expected of him, or at the very least explain why he is unwilling to cooperate.

Robert Sheaffer
Monte Sereno, Calif.

Heritability studies and the Left

The SKEPTICAL INQUIRER should be cautious about accepting attacks on heritability studies entirely at face value (Articles of Note, Winter 1989). Just as the Bible-literalist cannot accept paleontology, so to the ultra-Left no study that purports to show heritability of any mental trait, no matter how well designed, can *ever* be valid: It contradicts Marxist ideology. Even more moderate writers

who know better often prefer to pretend otherwise because they think this knowledge has dangerous implications. *Science for the People* may have well-founded points to make against the Minnesota Twin Study, but what are the odds that it would not take the same stance against the best possible heritability study?

The case of Sir Cyril Burt, constantly brought up in this connection, illustrates the difference between science and pseudoscience. In pseudoscience, fraud is nearly unassailable because failure to replicate is disregarded. Burt's fraud, on the other hand, went undetected because his fictitious results were consistent with what all other investigators had found.

Taras Wolansky
Kerhonkson, N.Y.

Origins of Noah myth

In his review of *The Lost Ship of Noah* (*SI*, Winter 1989), Al Martin might have been less forbearing.

An acquaintance with mythology is useful when discussing myths. The flood-and-ark story originated among the Sumerians as early as the fifth millennium B.C. The Sumerians enjoyed a well-developed civilization in the fourth millennium, long before the Hebrews descended from their mountains to the desert. Their "Noah" was Ziusudra. From them the story passed to the Babylonians, whose "Noah" was Utnapishtim. The Hebrews, in turn, learned the story from the Babylonians.

Any ark seen on Mt. Ararat or anywhere else, therefore, must be the craft of Ziusudra, not of Utnapishtim, and certainly not of Noah. It is tempting to speculate, however, that there are *three* arks on the mountain; this would help account for the variety of locations and conditions reported among the arkaic explorers.

Noah's technical problems were even more severe than Martin allows for. Genesis 7:2-3, in the familiar King James Version, says: "Of every clean beast thou shalt take thee by sevens, the male and his female: and of the beasts that are not clean by two, the male and his female. Of fowls also of the air by sevens, the male and the female." Where did Noah *put* all those creatures, and their food sufficient for a year?

Roy F. Butler
Waco, Texas

A stimulating issue

As usual I have devoured your latest issue (Winter 1989) in one day. Needless to say, I enjoy your publication very much and manage to find a number of interesting items in each issue. Donald D. Jensen's article, "Pathologies of Science, Precognition, and Modern Psychophysics," was especially interesting regarding the pathologies of science and the remedies for same. It is fitting that your critical focus extends to science as well as nonscience, as it does also in "Certainty and Proof in Creationist Thought," where author Joseph E. Laferriére takes to task those scientists who air the misconception that science "proves" things. Dogmatism is not unique to fundamentalists but is also found among the ranks of scientists, as the history of science demonstrates, and an increase in knowledge should go hand in hand with an increase in humility. The more we know, the more we know we don't know.

The letter by Herman J. van Norden, M.D., entitled "Religion and superstition," makes the point that "most children are taught in Sunday school to believe on faith, and this is presented as a virtue. But once you teach children that some uncritical, irrational beliefs are acceptable, there is no limit to what they will accept on faith." The point is well taken, but I do not think it should be limited to Sunday school class. The same process can take place in a science class, unless the teacher is very careful. The great majority of people are, as the Bible itself phrases it, "sheep," and they will follow uncritically any authority figure, whether a religious leader or a scientist or even a skeptic. It behooves thought leaders of every stripe to exercise their power over

the sheep with wisdom and honesty and caution and compassion, but unfortunately these are rare human virtues in any age.

Arlin Baldwin
Coarsegold, Calif.

Dianetics donations

Bobby Newman complains (*SI,* Winter 1989, p. 125), not without reason, that copies of a book called *Dianetics* by L. R. Hubbard are being handed out free of charge to libraries around the United States. It hasn't just been happening in America: the University of Surrey, in England, was recently sent an unsolicited copy. That was only a paperback, however, not the "soft green leather with gold trim" that Newman has sighted.

Newman seems to suggest that such books are harmful and should therefore not be accepted as donations to libraries (even when they are bound in soft green leather), unless, at the very least, there are donations of critical works that would counter the message.

As a card-carrying skeptic of many years' standing, I think he's probably right. As a librarian of even more years' standing, I think he may be wrong. The paradox of skepticism is that it demands the free flow of ideas. We should seek not to impose our views on others, but to argue for what is rational and reasonable, and to seek to persuade by debate. I have no wish to stuff my library's shelves with pseudoscientific garbage; I have, however, to accept that Hubbard's foolish "ideas" have made an impact in some areas and are thus of interest to scholars in sociology and psychology. Not to accept free copies of *Dianetics* would be to deprive skeptical writers of the source material upon which they could base their critiques. (Spending good money to buy copies would of course be a very much worse option!)

John A. Lord
Shalford, Guildford
U.K.

I can understand why your correspondent would be disturbed about the distribution of Hubbard's *Dianetics.* It is, however regrettably, a part of our popular culture and the scripture of a cult that has thousands of followers. As such it merits a place on library shelves. I have faith in the basic intelligence of most college students. Many of them profess belief in extraterrestrials, ESP, and other occult phenomena. That notwithstanding, most of them, when they read the hard stuff, recognize it for the irrational garbage it is. Reason and truth will eventually prevail. Censorship is bad no matter how justified it may seem. We have a copy of *Dianetics.* We also subscribe to the SKEPTICAL INQUIRER. It is a pretty effective counterweight.

John H. Wildo
McCain Library
Erskine College
Due West, S.C.

Mensans a biased sample

Guy Châtillon's study of "belief in paranormal theories . . . among . . . intelligent people" (Letters, Winter 1989) would be more credible if he had used a *random* sample of "intelligent" people, rather than "those who attended a meeting of a Mensa club." Membership in Mensa is "restricted to people with high IQs" *who want to be in such a group.* It thus is strongly biased by important *attitudinal and personality* characteristics having nothing to do with any reasonable notion of intelligence.

I joined Mensa many years ago, as a student, out of a feeling of reciprocity for being given the opportunity to take a free IQ test in a local membership drive. However, I never attended meetings, and I declined to renew my membership because reading their narcissistic newsletter convinced me that the whole idea was silly, much like patting oneself on the back for having decided to restrict one's social contacts to Sagittarians.

Acceptance of the notion that how one scores on IQ tests is a valid and reasonable criterion for one's choice of

people to associate with or groups to join is *already* a significant concession to pseudoscience. It is not surprising that people who have made that concession would turn out to be more broadly open to other forms of nonsense, questions of "intelligence" notwithstanding.

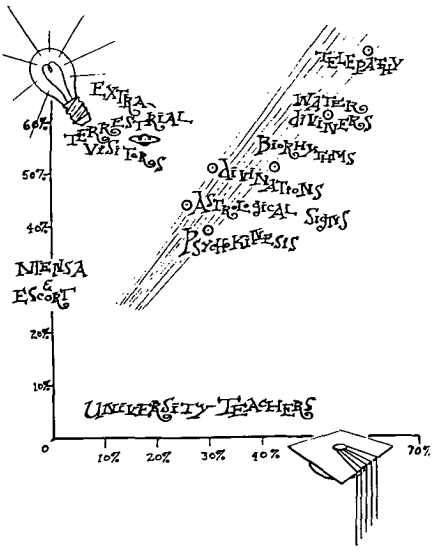
Steven Cushing
Dept. of Mathematics
and Computer Science
Stonehill College
North Easton, Mass.

There is hope. The margin is narrow, but there is hope.

Knowledge, more than intelligence, confers protection against pseudoscience. That point is made plain by the statistical tabulation in Professor Guy Châtillon's letter, summarized in the enclosed scattergram.

One category stands out from the others: When it comes to Extraterrestrial Visitors, university teachers are more skeptical than Mensans and their escorts—by a ratio of more than 30-to-1.

Now I have been both a university teacher (UCLA, from 1964 to 1969) and



a member of Mensa (from 1979 until I read Professor Châtillon's letter). The case I make against extraterrestrial visitors (*A Certain Bicyclist*, p. 68) is nevertheless based on reasoning more than knowledge, logic more than information.

Paul Niquette
Resource Books
Irvine, Calif.

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Phoenix Skeptics, Michael Stackpole, Chairman, P.O. Box 62792, Phoenix, AZ 85082-2792.

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Illinois. Midwest Committee for Rational Inquiry, Michael Crowley, Chairman, P.O. Box 977, Oak Park, IL 60303.

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Iowa. ISRAP, Co-chairman, Randy Brown, P.O. Box 792, Ames, IA 50010-0792.

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(continued on next page)

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Wisconsin. Wisconsin Committee for Rational Inquiry, Mary Beth Emmericks, Convenor, 8465 N. 57th St., Brown Deer, WI 53225.

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The Committee for the Scientific Investigation of Claims of the Paranormal

The Committee for the Scientific Investigation of Claims of the Paranormal attempts to encourage the critical investigation of paranormal and fringe-science claims from a responsible, scientific point of view and to disseminate factual information about the results of such inquiries to the scientific community and the public. To carry out these objectives the Committee:

- Maintains a network of people interested in critically examining claims of the paranormal.
- Prepares bibliographies of published materials that carefully examine such claims.
- Encourages and commissions research by objective and impartial inquiry in areas where it is needed.
- Convenes conferences and meetings.
- Publishes articles, monographs, and books that examine claims of the paranormal.
- Does not reject claims on a priori grounds, antecedent to inquiry, but rather examines them objectively and carefully.

The Committee is a nonprofit scientific and educational organization. THE SKEPTICAL INQUIRER is its official journal.